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State Stops Drilling In At Breckenridge; Production Exceeds Outlet

Staff Special

HOUSTON, TEXAS, Oct. 18

GOVERNMENT interference in the affairs of Texas oil producers has been brought about by the extravagant town-lot method of development within and adjacent to Breckenridge, Stephens county. Initial flush production from a number of wells completed almost simultaneously in the limited area has boosted the daily recovery well above 100,000 barrels. Pipe lines accessible to the producers are limited to a maximum daily capacity of about 85,000 barrels. The margin of over-production has filled available storage and is being run to earthen tanks.

Shutting in of the wells at Breckenridge by order of the Texas Railroad Commission, under the authority of the state conservation law, is imminent. After a hearing in Austin on October 18, relative to the congestion at Breckenridge, the commission issued a warning to the effect that wasting of oil would not be tolerated. It stated that pipe line capacity had been reached and exceeded by Stephens county production and that if any more wells were brought in the commission would be obliged to exercise its authority.

Drilling operations will have to be suspended when the pay is reached until there is a way to handle the crude. A 6-inch pipe line, connecting with the remainder of its carrier system in Stephens county, is being built to the Breckenridge area by the Prairie Oil & Gas Company, which assures some relief when completed.

The notice was issued by the railroad commission as follows: "Whereas it has been brought to the attention of the commission that the capacity of the pipe lines serving the Breckenridge field, amounting to 85,000 barrels a day, has been reached and that there are a number of other wells in the same field nearing the sand, and will likely be brought in before this condition can be relieved by the pipe lines and there is lack of adequate storage in sight to care for the excess production;

"It is ordered by the Railroad Commission of Texas, that notice be and is hereby given to all interested parties, that in the event such a condition arises as now seems imminent, this commission will not hesitate to exercise the power vested in it, to cause wells to be shut in after they are completed to stop any waste contrary to the law and the rules and regulations of this commission."

Coincident with the completion of additional wells in the Breckenridge district of Stephens county in the last two or three days which lifted the field mark well above 100,000 barrels daily, it became necessary to do something toward dealing with the congested conditions resulting from intensive drilling on and around the townsite. A hearing on October 18 before the Texas Railroad Commission in Austin was the result, operators who had brought their plight upon themselves and other producers who were victims of this condition participated.

Among the latest completions to swell production far in excess of the approximately 85,000 barrels daily pipe line caacity was the No. 1 Goodwin well of the Bass Petroleum Company adjacent to the Breckenridge townsite. This well, which had initial production of 3,000 barrels, was drilled deeper within the last two days, coming in for a maximum of 13,000 barrels. No. 2 on the same tract is a 200-barrel new well, at 3,107-3,150 feet. North of Breckenridge, the two latest completions of Snowden Brothers & McSweeney, on the J. G. Higginbotham tract, are No. 6, making 3,600 barrels at 3,122-3,150 feet, and No. 8, good for 8,000 barrels, maximum production.

Pipe line companies which primarily built their carrier systems into the Ranger country to handle their own production and which produce 90 per cent of the oil outside of the intensively drilled area are naturally opposed to prorating the oil, which has resulted in the present local congestion.

Discussions under way looking toward suspension of operations and curbing the completion of wells for a period of fifteen days, have not kept down the inevitable congestion resulting from continued bringing in of wells and the meeting at Austin was called.

The situation is a repetition of the serious congestion in the Burkburnett Northwest Extension area of the sand territory along the Texas-Oklahoma line, except that being in the black lime country it more nearly approximates the Desdemona congestion, in that depletion would be normally more rapid in the Breckenridge wells than in the sand area. The Breckenridge situation, however, resembles the more aggravated pipe line situation at Burkburnett, with the exception that there are no railroad facilities worthy of being considered a factor in taking tank car shipments out of Breckenridge, hence the inability of scalpers to dump their crude and thereby undersell the posted prices of principal purchasers, precipitating a local decline in crude.

The fact does remain, however, that some crude oil at Breckenridge must now go into earthen storage, causing waste from evaporation and occasioning serious fire hazard unless some way is found of dealing with the problem, and the pipe line purchasers cannot be expected to keep up the posted price of this specific crude oil unless able to care for it properly.

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Last Minute News From Oil Fields

North Stephens Well Makes 3,000 Barrels

Staff Special

HOUSTON, TEXAS, Oct. 18.—Montrose Oil Refining Company, subsidiary of Invincible Oil Corporation, has completed No. 1 S. J. Allen, in northern Stephens county, eight miles northeast of Breckenridge, and four and a half miles south of the Lyden development along the Stephens-Young county line making 3,000 barrels initial production.

The well is on a 265-acre tract adjoining on the east that one which F. J. Mildran and others operating as Shawmut Oil Company, recently brought in their S. J. Phillips well making 190 barrels at 3,296 feet. The Shawmut well is a half mile west. The nearest other production is the O. S. Martin well of Consadine and Knight, three miles northeast, completed at 3,293 feet, with initial production of 500 barrels, average production September 1 being 200 barrels. About the same distance west the Texas Company's No. 2 Black Brothers, an indifferent producer, was drilled months ago. Lyden pool development around Crystal Falls is the next nearest production four and one-half miles north.

Salt Water Hits Two Los Naranjos Wells

Staff Special

HOUSTON, TEXAS, Oct. 18.—Ranking in importance with the finding of oil in the Zacamixtle coutry to the south is the report from Mexico of the encroachment of salt water on two additional wells in the Los Naranjos territory.

Both these wells are in that part of the Los Naranjos pool known as the Amatlan Hacienda and lie farther south than the Chinampa Hacienda, where the first salt water along the Los Naranjos part of the light oil producing fold in the lower country appeared.

Sufficient salt water has appeared in the No. 4 well of the International Petroleum Company on lot 252 Amatlan to cause the Huasteca (Mexican Petroleum Company) interests to refuse longer to take the oil from the well.

Farther south on lot 113 Amatlan the Compania Mexicana De Petroleo "El Aguila," S. A. (Mexican Eagle) No. 10 well is reported showing salt water, these wells in connection with others on the Chinampa Hacienda creating a serious situation in the latest of the high spots between Tepetate and Alamo to be affected.

Previously the Compania De Petroleo De Transcontinental (Standard of New Jersey) had found salt water encroaching upon its May completion on lot 115 Chinampa as long as two months ago. A salt water original failure drilled by the Compania Metropolitana De Oleoductos, S. A., operating subsidiary of the Island Oil & Transport Company, was on the same lot where its producing Chinampa well came in at a higher level and remains unaffected.

Torpedo Men Hold Quarterly Meeting

LOUISVILLE, KY., Oct. 19.—The Nitroglycerin Manufacturers' Association met here Monday and today in its quarterly session. The attendance was representative of the torpedo companies, most of which have their principal offices east of the Mississipi river. The sessions were devoted to the discussion of ways and means to safeguard the handling and transportation of nitroglycerin.

Shallow Homer Well In For 8,000 Barrels

Staff Special

SHREVEPORT, Oct. 19. — The Texas Company's No. 1 Lewis blew itself in Monday at Homer from shallow pay, and was closed down for flow line connection. The well is in the northeast of southeast of southwest of Sec. 25-21-8. It is the farthest southwest well of the pool and lies south of the United Oklahoma Oil & Gas Company's two wells, the last of which was completed a week ago for 8,000 barrels initial in 2,100-foot pay.

All these wells are immediately southwest of Standard's completion 10 days ago of a 2,000-barrel well in Shaw-Palmer No. 24.

LIMA, O., Oct. 19.—Pipe line runs of the Buckeye Pipe Line Company for September are as follows:

Lima division, 125,902.82 barrels.

Cleveland division, 59,455.08 barrels.

Macksburg division, 294,341.06 barrels.

Total, 479,698.96 barrels.

September figures show a falling off of 9,149.68 barrels.

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Line From Arkansas Gasser Is Completed

Staff Special

EL DORADO, ARK., Oct. 18.—Constantin Refining Company, of Tulsa, has completed a 4-inch line from its gas well four miles southwest of El Dorado and will be delivering to a number of industrial consumers within two weeks.

This well, which required four weeks to control, is making at least 20,000,000 feet daily. A little black oil sprays from the 1,300-foot sand, but gas from 16 feet of gas rock at 2,210 feet is absolutely dry. No. 2 well, a location southeast of No. 1, is cemented at 1,300 feet where a sand shows. Five tests are now drilling in Union county. In Calhoun county, 10 miles south of Camden, a well is showing a little black oil. The Hunter well at Stephens is pumping only about five barrels now with some water, and will be abandoned as a producer at its present depth of 2,125 feet. It is the property of Standard of Louisiana. Five tests, all below that depth, are drilling near the Hunter well.

Huasteca Moving Oil From Chinampa Well

By Special Correspondent

TAMPICO, Oct. 18.—Woolett & & Thompson's No. 2, Lot 114, Chinampa, was completed October 3 as a 60,000-barrel well. The production, sold to Huasteca Petroleum Company, is already being moved out.

Atlantic, Gulf & West Indies Steamship Company, operating as Cias Del Agwi, S. A., completed No. 1 well in the Federal zone in the middle of Tancochin river, October 4, making 25,000 barrels at 1,854 feet.

Tal Vez Oil Company's No. 4 well, in the Panuco district, has gone to salt water on a lease where previous encroachment resulted late in July, and the La Corona Company's P.-7, Lot 5 well, Panuco district, drilled into salt water at 2,780 feet.

Mexican Sinclair Well 75,000 Barrels

Staff Special

HOUSTON, Oct. 18.—Mexican Sinclair Oil Corporation completed its No. 2 well, lot 251 Amatlan, in the lower fields of Mexico, at 1,872 feet, good for 75,000 to 80,000 barrels, maximum production, according to advices received October 15 in Houston by W. B. Connelly, vice president of the Sinclair Companies. The well was promptly controlled.

Zacamixtle Relieves Mexican Situation; Congestion At Breckenridge

By Paul Wagner
Editorial Manager Southwestern Bureau

Staff Special

HOUSTON, TEXAS, Oct. 16

BRECKENRIDGE, Texas, is riding a wave toward serious congestion! Zacamixtle has saved the day for Mexico! And having saved the day for Mexico, the key to the future domestic crude oil situation is Zacamixtle! These constitute the highlights, both current and prospective, in the oil industry of the Western Hemisphere. The term Western Hemisphere is used advisedly because it is necessary to include Mexico as a considerable factor in the future of the American petroleum industry.

Without the opening up of the seventh "high spot" on the 40-mile "knife edge" fold between Alamo and Tepetate in the so-called "lower country," the end had been in sight for the light oil producing region of Mexico.

Successive salt water encroachments to take Tepetate, Juan Casiano, Alamo and Potrero del Llano constituted a creeping together from both ends of the fold of the menace to light oil producing fields along the east coast of Mexico. There remained until the Huasteca Petroleum Company brought in last week its well on lot 24, Zacamixtle, only the Chinampa-Amatlan production in the Lost Naranjos section and the Cerro Azul development to be free from serious salt water encroachment.

Zacamixtle, therefore, saves the day. While at least two Chinampa wells have shown salt water, the situation there is not currently serious, but such a pull upon the reservoir as is constituted by a half dozen or more wells on lot 135, an 80-acre area where individual completions have shown for maximum potential production in excess of 60,000 barrels daily, spells a situation to be watched with close-keyed interest. Undoubtedly, the development on each of the high points on the knife-edge ridge must sooner or later go the way of earlier production.

Mexico Key to Market

America's need for crude—not as viewed in the week-to-week situation, and yet narrowed down to a matter of mere months contemplates greater producton than known fields in the domestic industry can supply. There is no wavering in the decision on the part of the Pacific coast industry or that part of the industry east of the Mississippi river that a serious situation has confronted it with regard to future supply. Only in the Mid-Continent and in parts of north Texas has there been so much as a whisper of a break in the crude oil market. In some places at least "The wish has been father to the thought."

That part of the domestic oil industry east of the Mississippi river knows that domestic crude supply cannot provide over the future, and that within a few months, the napthas that the trade demands. The same is true in California in only a lesser degree. Oklahoma production at its summer peak is again below the crest and probably cannot hold to its present level. In Texas, a local congestion at Breckenridge threatens, but it is a situation having no broad effect upon the industry, and Texas production may be regarded as a whole as pursuing the course that followed the downturn months ago.

Mexican light crude is, therefore, needed to provide the necessary raw material required by the domestic trade. The percentage of naptha topped from light Mexican crude can go a long ways toward relieving the situation of the future, and the residue will provide fuel for commerce and manufactories. Los Naranjos, broadly termed, has made possible the doubling of exports from Mexico since the first of the year—but it cannot last forever, notwithstanding that it is behaving satisfactorily for the present. Therefore, Zacamixtle has been the "key," not only to the Mexican crude oil situation, but the domestic situation also. The well in question is situated immediately south of the terminus of the Tidewater Oil Company's projected pipe line from the coast to acreage of the Midco Mexican Oil Company being developed by the Tidewater, between Tepetate and Alamo.

In the Breckenridge area of the black lime territory, Central Mineral Belt of Texas, intensive development on and adjacent to the townsite is responsible for the swell toward a crest that, if uncurbed, promises within the next 40 days a serious local congestion. Uncontrolled it threatens such a situation as existed at Burkburnett, the sand country northwest of Wichita Falls, and at Desdemona, the earlier intensively developed area of the black lime country.

The situation at Breckenridge is to be properly described as congestion rather than over-production. The pipe line carriers are practically full and no considerable storage room exists, the failure of the Ranger pool proper and Desdemona to meet expectations, or even measurably sustain the flush production of their earlier history, cutting shore the pipe line programs that once promised to be radically overbuilt. In the case of the Prairie Oil & Gas Company, which at one time had 63,000 barrels line capacity out of the Ranger territory, in addition to a leased line that at one time gave it facilities for 80,000 barrels daily, the marked depletion of the general Ranger territory caused it to take up one eight-inch line, so that now it has a maximum of 40,000 barrels line capacity out of the whole black lime area.

The pipe line situation will be treated in greater detail as the situation wth regard to producton is followed further down in this review of conditions. The daily crude oil production at Breckenridge at present averages approximately 84,300 barrels, or within a few thousand barrels of the pipe line capacity out of Stephens county. Ranger pool proper,

Stephens County Pipe Lines Inadaquate

BRECKENRIDGE, which once prohibited town-lot drilling by city ordinance and afterward let down the bars, opened the week of October 18 with production a few thousand barrels in excess of pipe line capacity. This excess is being handled to storage, but only the combined efforts of operators to curb drilling until the flush head is off the area can stave off prorating of crude incident to congestion. No official action has been taken to slow down operations, but producers are discussing suspension of operations as a partial relief measure.

Last-minute advices from Mexico regarding the Huasteca Petroleum Company's Zacamixtle well report the bridge at 2,427 feet cleaned out. Total depth is 2,585 feet. First news credited the well with 12,000 barrels daily, but later reports indicate that it is much smaller. As an individual well it is considered disappointing, but from the viewpoint of proving that oil exists on another high spot along the fold it is regarded as the most significant development in Mexico for months.

which at its peak two years ago was good for nearly 100,000 barrels daily, has dwindled to approximately 15,000 barrels, and Desdemona, good for 65,000 or 75,000 barrels daily at the height of its congestion from intensive drilling, is good for less than 9,000 barrels daily at present.

Breckenridge, altho characteristic of the rest of the black lime development—with its excessive drilling costs and the rapid depletion of wells—has not shown so high an early percentage of decline from the maximum flush of the wells.

As the situation stands, one of two things must develop to prevent serious congestion: (1)—The wells must take on quickly the more rapid depletion characteristic of the Ranger pool proper and Desdemona, or (2)—The operators who are plugging down wells with amazing rapidity to the 3,100-3,200-foot black lime producing horizon must guard against bringing in these wells, there being no place to store the expected production.

Approximately 135 drills are close enough to the productive level to insure the completion of that number of tests within 40 days. Of this number, considering the more productive behavor of the area immediately adjacent to Breckenridge as compared with the rest of the lime country, some 80 per cent may be expected to yield oil in quantities varying from 200 to 700 barrels, initial producton, after shots.

Averaging this initial production at 400 barrels to the more than 100 wells to be completed in the period, it will be seen that it would be necessary for the old production to decline 50 per cent in 30 days to allow for taking care of the oil on the present basis, of pipe lines approximately full with an additional minimum of 40,000 barrels to be added from wells nearing the pay level.

It will be understood that this theoretical calculation (which is rather under-rated than over-estimated) is predicated on an average of 400 barrels initial production to each of the more than 100 wells to be reasonably considered prospective. While there will be some to come in for as low as 100 barrels, a few more from 200 to 300 barrels, and still others of varying maximum production from 400 to 700 barrels, it will be noticed that no account has been taken of such larger production as has come from some of the Cooper & Henderson wells; the Galvez Oil Company well, good at its maximum for more than 7,000 barrels, or the Gulf Production Company's K. Stoker, which made at its completion in May a maximum of 14,000 barrels daily and still is producing in excess of 3,000 barrels.

Altho the Gulf well is an exception to the general rule, a single similar completion would pull up the very conservative average estimated for the producing wells nearing completion. A dozen such wells as that of the Galvez Oil Company, or the 4,000-barrel, initial production, completions of Cooper & Henderson, might even pull the average of the soon to be completed producers to 800 barrels or more each. In such a case the present daily production of nearly 85,000 barrels would be virtually doubled—this, of course, not taking into account the normal depletion of existing wells from their present production in the 30-day period.

Steel storage in the entire Ranger territory (which includes Breckenridge as the Stephens county division) totals, roundly, 12,000,000 barrels, but of this total there remains less than 4,000,000 barrels of storage room with nearly 8,500,000 barrels of Ranger crude classing as stocks. Three and a half million barrels of storage room means only about 30 days, or 40 days at the outside, of room, on the basis of 100,000 barrels daily going to storage. But when it is remembered that this storage room is distributed among all the interests active in the lime belt, it is further realzed that not all of it, small as it may be in the face of the congestion foreseen, is in the hands of active purchasers of crude; also the older Desdemona and Ranger proper production have to be taken care of (as they will be) along with Breckenridge.

Now that conditions at Breckenridge are reaching toward the point of congestion, a view of the pipe line situation is in order. The failure of Ranger proper and Desdemona to meet expectations, narrowed down the facilities thru the pulling up of the one Prairie line and the holding back of pipe line programs on the part of others that might have been built, but which would have constituted an investment folly—in the light of the situation both then and now.

Outgoing Line Capacity

Here is roughly the lime capacity out of the general black lime producing area:

	Barrels
Prairie	40,000
Humble	20,000
Magnolia	18,000
Texas	20,000
Sinclair	20,000
Gulf	20,000
United Producers	8,000
Total	146,000

Out of Breckenridge alone, the present handling of crude daily, some small part of it going into steel storage, is distributed as follows, in round figures:

	Barrels
Texas	21,300
Gulf	24,000
Magnolia	11,000
Prairie	13,500
Humble	16,000
Total	85,000

Adding 9,000 barrels daily production from Desdemona, roughly 15,000 barrels from Ranger proper, and some 4,000 barrels from the Sipe Springs pool (southwest of Desdemona), there is reached a total of approximately 115,000 barrels daily being handled by the pipe lines. Sinclair and the United Producers pipe lines are the only carriers not approaching the peak load of their activity. Sinclair has not been recently a very active purchaser of crude in the lime country. The United Producers pipe line, controlled by the Transcontinental Oil Company, with a refinery at Fort Worth, usually has run recently to about half its capacity, but its field lines do not extend to Stephens county.

As for storage room, only the Prairie, with roundly 1,500,000 barrels, and the Humble, with approximately 1,000,000 barrels, have space reaching to a level of more than the 400,000-barrel mark. Here is given, in approximately round figures, the storage oil and storage room in the Ranger territory, by companies:

	Storage Oil, Bbls.	Storage Room, Bbls.
Humble	1,500,000	1,000,000
Prairie	2,350,000	1,500,000
Texas	375,000	160,000
Gulf	750,000	370,000
Magnolia	2,250,000	50,000
Sinclair	750,000	45,000
Pierce	46,000	300,000
Sun	nominal	136,000

An uncontrolled situation at Breckenridge, with which the operators must themselves deal, might even result in a local break in the market, such as that which marked the Burkburnett northwest extension development, with the exception, however, that only one railroad, a short line carrier of the Hamon & Kell interests, reaches into Stephens county, to allow an outlet for crude in tank cars. Such an outlet, because of traffic congestion, necessarily would be meager.

Any such cut, however, would be responsive to a local situation and would not affect general conditions governing the domestic oil industry.

Refiners Plan To Blend Two Trade Associations

Staff Special

OKLAHOMA CITY, Oct. 18. — More than 50 refiners of Oklahoma, Kansas and Texas were present at the joint meeting of the Western Petroleum Refiners' Association and the Texas Refiners' Association held here today. Upon the recommendation of President Pat Malloy, of the western refineries it was agreed unanimously that a committee from each association be appointed to confer, and work out a plan of consolidation between the two associations.

The proposed plan is to be presented to the executive committees of the two associations for their approval and adoption. The committees were Messrs. Marcel, Schock and Lehmann, representing the western refiners, and Edwards, Jensen, Jones, Hoevel and Hamilton for the Texas organizations. Julius A. Germany, president of the Texas refiners, presided and speeches were made by R. L. Welch, secretary of the American Petroleum Institute, who spoke about the institute and urged Mid-Continent refiners to attend en masse the annual meeting of the institute, to be held in Washington, D. C., November 17, 18 and 19. It is expected that its scope and activities will be defined at that time determining whether the institute will participate in controversial matters within the industry.

L. L. Marcell, president of the White Eagle Refining Company, talked on "Sales and Sales Methods." Clifford Thorne discussed freight rates, as did also Ed. Byars, rate expert of the Texas Refiners' Association.

It is the concensus of opinion that a satisfactory program will be worked out whereby the two associations can be amalgamated. Such an amalgamation, it is believed, would result in unanimity of purpose and enable Mid-Continent refiners to present an unbroken front on issues of common interest.

Relation Of Institute To The Industry

First Of A Series Of Discussions

THIS is the first of a series of editorials on the American Petroleum Institute, the general theme of the discussion to be what the future relation of the institute is to be towards the oil industry of this country.

Such a discussion seems to us particularly advisable at this time for two reasons.

First: the first annual meeting of the institute after its organization is to take place in Washington, November 17, 18 and 19. Matters vitally affecting its future will come up at that meeting. The more clearly the thought of the industry generally can be crystallized as to the work of the institute, its trend thus far, the more comprehensively can the problems in connection with its future be attacked.

In connection with a series of editorial discussions of the aims and purposes of the American Petroleum Institute and what it is to be in the future, starting in this issue of NATIONAL PETROLEM NEWS will carry such comment as is sent in by members of the industry. The discussion should be as wide and comprehensive as possible. Nothing relating to the institute, either by report or confirmed by fact, need be omitted. All that is asked is that those who may write in sign their communications.—Editor.

Second: the decision of the directors as to the attitude the industry shall take in the matter of the application of a portion of the industry for a reconsideration of the freight rate increase will likely determine how fully the institute will allow itself to take up problems within the industry. This is the first occasion for establishing such a precedent. Much depends on how the issue is decided. It should be decided with the fact in mind it does establish a precedent. The present status of the freight rate matter will be discussed later. The fact it is now an issue with the institute gives added reason for as full and wide a discussion of that organization.

It seems to us such a discussion should start with a review of what the institute has accomplished since its organization in the spring of 1919. Those accomplishments should determine the activity and virility of the institute's active heads, whether its service has been such as to determine definitely that there is a place in the industry for an organization of its scope.

There might as well be recognized at the start the belief which exists on the part of some within the industry that the institute is dominated by the Standard Oil group.

That belief has existed since the institute was formed. It was inspired by the fact the institute was an outgrowth of the Petroleum War Service Committee in which the Standard Oil group played a prominent part. It has been nursed and spread by a few individuals in the industry.

The institute is not the first organization around which has been raised the cry, "Standard Oil; Standard Oil." Similar rumors have arisen as regards other associations and companies and individuals. Such reports are circulated regarding this publication. Its publishers know full well that what it may say in support of the institute will be pointed to by some as another sign of its alleged Standard Oil tint.

With regard to the institute and the report of its domination by the Standard, we believe that if it is a rumor, it will eventually die for lack of supporting facts. If it is a fact there should be something tending to confirm it in the activity of the institute during its existence. With this in mind let us review that activity.

The activity of the institute falls into two classes. In one it serves as the mouthpiece of the entire industry in its relation with other agencies, such as the government or other industries. In the other it serves to bring to harmony if possible differing elements within the industry itself, to serve as a forum for the full discussion towards settlement of problems arising within the industry.

One of the first things the institute did after its organization was to form a committe of technical oil men and operating heads of oil companies to work with men from the automotive industries in outlining the motor fuel problem of the future. There had up to that time been no organization in the oil industry which could call the heads of the industry to concentrate on this or any other problem.

When the Bureau of Explosives of the American Railway Association attempted to lay down drastic regulations of loading racks and storage tanks on railroad property, applying them to existing plants, the institute brought to bear the opposition of the entire industry. As a result Order BCL-180 as finally issued was greatly modified.

By establishing a Transportation Bureau with M. J. Gormley at its head a service in expediting the rail movement of oil traffic was inaugurated which benefited the small companies with a limited traffic department more than the larger companies.

That same transportation division worked for a greater movement of oil field materials from the steel mills this summer, securing a special relief ruling from the Interstate Commerce Commission.

When congress passed the Dyer resolution calling on the Federal Trade Commission, this spring, to investigate the oil industry because of advancing gasoline prices. Secretary Welch directed the efforts of the industry to insure that the commission maintain a true perspective on the situation. It cannot be denied that the innocuous report as finally presented to congress was largely Welch's effort.

These definite accomplishments, to our mind, established clearly that there is a place in the oil industry for such an all-inclusive body as the institute. Whether a study of these and other past activities of the institute show evidences of Standard Oil domination every man in the oil business ought to be able to determine himself, without listening to rumor.

Burglary Precautions Among Features Of Denver Filling Stations

Staff Special

DENVER, Oct. 14

As a protection against burglary, one oil company operating service stations in Denver, has equipped all its stations with heavy steel safes in which are built especially strong steel compartments for currency, which are supposed to withstand the efforts of any but a most expert cracksman, even after the outer safe door has been opened.

The combinations to the safes at the various stations are known only to the company auditor. The doors to the safes are kept open during the daytime when the stations are open for business. The attendant, when he is thru for the day, puts his cash in the safe and locks it, by shutting the door. The auditor makes his round of the station the first thing in the morning, opens the safe, collects the cash and checks the station inventory against the cash representing the previous day's business. Then he leaves the safe open and the attendant locks it again at night. As an additional safeguard burglar insurance is carried on all the stations.

The head of this company states checking the business of his stations is simplified by having the cash collected in the morning for all the previous day's business and audited against the inventory before the day's business is started, rather than taking the station inventory at one time and collecting the cash at another. By this plan he avoids also having to send an auditor around to make collections in the evening when the chances are greater that he might be held up than in the daytime. By having only the auditor know the combinations he does away with the possibility of its getting into the hands of outside persons.

Gasoline service stations generally have been developed to a higher degree of attractiveness and efficiency in Denver than in the majority of western cities. No one company is operating stations as ornate in appearance and as costly as are to be found in isolated instances at some points in the east. But the Denver stations are on a pretty fair general level of progressiveness.

This is no doubt due in part to the great amount of motor touring in that city. City authorities estimate that as high as 23,000 visiting motor cars tour its streets on individual days during the season. The city, with a population of 256,000, now has about 70 stations of the drive-in type with several more planned for next year.

Some other progressive ideas which have been developed in Denver and are worthy of thought by service station operators generally are given below. They are not all new but they still are in advance of general filling station practice.

The washing of station exteriors regularly and frequently to add to their attractiveness thru their cleanliness is followed by more than one Denver company. White tile is used extensively in service station construction, for one reason, at least, that it will wash easily. Denver is clean compared with some of our eastern manufacturing cities, but the stations there are washed more frequently than one would believe necessary. In the dazzling Colorado sunshine, against a background of green turf in many cases, they give an impression of cleanliness to the station that is bound to include the oil products sold there.

Generous Driveways

Several Denver stations have gone to the extreme in taking plenty of ground for driveways. Pumps are so placed they are accessible from two sides wherever possible and the motor-

Fred C. Cramer, lower righthand corner, operates a chain of service stations in Denver under the name of the Denver Powerine Company. Upper view is his newest station on Speer Blvd. His method of handling lubricating oils at his stations is also shown

ist, if he cannot be taken care of by the attendant as soon as he enters the station, can at least pull up alongside a pump so that he is all set to receive service. Experience has shown that, if a motor car driver is forced to draw up behind a car at the pumps he will not wait as long for service as he will if he can pull up beside another pump or on the other side of the same pump.

Two illustrations of the type of filling station architecture developed at Denver by the Continental Oil Company. Upper is called a two-wing station, having a drive on two sides. Lower is a three-wing station, designed to provide facilities for handling a larger volume of business. Construction is of white tile with green tile roof

At the newer Denver stations also the pumps are set on substantial concrete foundations and raised in some cases as much as two feet off the ground. Thus the danger is removed of a car getting over the edge of the drive, hitting the pump and putting it out of service for the time being.

Lubricating oils are pretty generally handled in a more efficient way by Denver oil companies operating filling stations than is true of most stations the country over, as is illustrated by one of the accompanying photographs. The general practice seems to be to have special cans or tanks for these oils, one for each grade carried at the station and each equipped with a glass gauge, which not only shows the attendant how much oil he has on hand, but also shows the motorist what product he is getting, if he is interested enough to leave his car and take a look inside the station. These tanks are carried on a light steel rack with a drip pan running the full length under the faucets to the tanks, the drip pan draining into a pail on the floor, so that the soiling of the station floor with grease and oil is entirely eliminated.

Another progressive feature found at Denver service stations is keeping the cash register outside the station building while the station is open for business, so that the attendant is not required to run inside every time he wants to make change or ring up a sale. The registers are kept on a shelf outside a window and can be easily pulled inside when the station is closed.

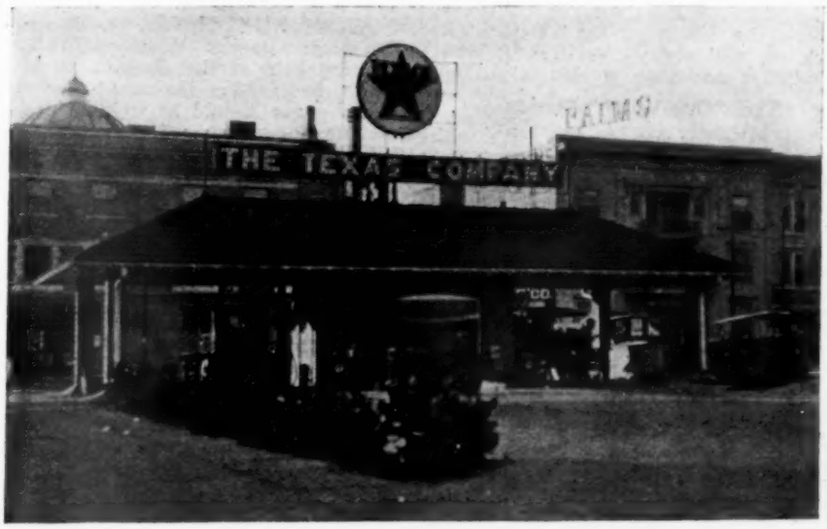
Several Denver oil companies maintain large electric signs atop their station buildings calling attention to the company operating the station, rather than merely to the fact that gasoline is for sale there. These signs are so designed that they are not eyesores during the daytime and they add greatly to the appearance of the station at night. One company figures the cost of operating its sign at its principal station, keeping it running until midnight, around $30 a month. It figures the advertising value is easily worth more than this outlay.

The principal oil companies operating service stations at Denver include the Gates Oil Company, owned by individual interests in the Producers & Refiners' Corporation, but operated separately. This company has recently taken over the Altitude Oil Company and other companies outside Denver and is likely to become an active factor in Rocky Mountain territory generally. The Continental Oil Company, representing the Standard Oil interests, The Texas Company, Sinclair Refining Company, and the Denver Powerine Company are all operating stations. The Sommers Oil Company is a new concern which is getting into the service station business also.

Operates Six Stations

The Denver Powerine Company, of which Fred C. Cramer is president, is operating six distinctive stations of its own in Denver now and is figuring on building eight more. It has recently opened a station on Speer Blvd. and Clarkson in a good residence district. There was considerable opposition among property owners and residents of the neighborhood before the station was put up. This feeling has died out, Mr. Cramer states, since the station has been running and it is looked upon now as an attraction to the neighborhood. Mr. Cramer says he bought the land for the station and then studied the site for three months before actual construction work was started, so that he might lay the property out to the best advantage.

There are four drives to the station, instead of the usual two found at most places. Gasoline is dispensed at pres-



The Texas Company leased a triangular piece of ground downtown and put up this station. Artistically arranged flower beds add to the appearance

ent from two electrically operated pumps and another is to be installed at the curb, provision for such installation being made when the station was designed. Inlets to the storage tanks are located in the rear of the station so that company trucks supplying the station need not interfere with cars wanting service. This station is attractively decorated with ornamental lamp posts and flower beds. The station is of brick construction with a stucco finish.

Mr. Cramer features the name of his motor fuel "Powerine," which name he has recently had copyrighted, giving him the right to its exclusive use over the country. This name is featured on the electric signs and also on the globes on the ornamental lamp posts. He developed the use of safes with the combination known only to the auditor, referred to earlier in this article.

His stations carry a few accessories, such as tubes, patches and lights, as a service to the trade in the neighborhood which calls on him at night when garages are closed. Those accessories are limited in variety and quantity of any particular one accessory carried in order to avoid carrying a space-consuming stock at the stations.

The Gates Oil Company in its expansion, according to H. E. Johnston, manager of the sales department, acquired some service stations which were also handling accessories. This business his company is dropping to center its efforts on pushing sales of oils and gasoline.

Mr. Johnston says his experience has been that inventories of small accessories are very hard to keep accurately and that there is quite a loss thru waste, careless handling and occasionally thru dishonesty on the part of attendants, which loss is hard to place. He believes also that a service station frequently loses a chance to make a regular patron of a motorist on oil and gasoline to make a one-time sale of an accessory on which there is little or no profit in handling.

A standard type of architecture which provides for handling varying amounts of business at a station has been worked out by the Continental Oil Company, according to E. S. Karstedt, in general charge of sales for the company. Where the business the station can work up will always be limited, what is called a one-wing station is put up.

The "One-Wing" Station

This calls for one double drive with one side covered and the pumps located at the base of the support to the roof, so that cars can be served on either side of the drive.

The material is white tile with a green tile roof, the combination making an attractive station, and one that can be easily washed and cleaned. Where the possible business to be developed warrants, a two-wing station is put up. This is like the one-wing station except that a covered drive is built on both sides of the station building. For points where still more business can be developed a three-wing station is put up, with drives on three sides. Illustrations of two and three-wing stations accompany this article.

"For locations where the company has been unable to purchase the property and put up a permanent station, the company follows the practice of erecting a temorary steel station, which can be taken down and moved when the location is given up," stated Mr. Karstedt.

The company has carried out the colonial style of architecture in its permanent stations, using the figure of a minute-man of Revolutionary days as a sign post and ornamental lamp posts of colonial design. Air is carried at the curb in sunken metal-lined boxes, where the hose can be coiled when the station is closed. This company, as does the Sinclair and Denver Powerine Company at their best stations particularly, lays out its station grounds to give ample room for drives and entrances, improving the appearance of its stations by keeping them at some distance from adjacent buildings and also making them more efficient motor fuel dispensing places.

The Sinclair Refining Company has recently built a station that pulls the attention of the passing pedestrian or motorist at Speer Boulevard and Fifth Avenue. This is of white tile thruout, even the ceiling to the covered drive which extends over a double drive being of this material. This tile construction adds greatly to the effect when the station is lighted at night. The station building itself is entirely overshadowed by the imposing covered drive. This station is designed to operate four pumps. Two are installed now. They are set high on concrete islands to protect them from injury by careless drivers.

The Texas Company has a brick station located on a triangle at Eighteenth and Broadway in the downtown section that catches considerable trade. It is out of the ordinary to find a downtown station with the ground at its disposal that this station provides. Lubricating oils are dispensed entirely here by means of small portable tank and pump outfits. This station displays at night the familiar Texas Company emblem.

An imposing covered drive is the feature of a new Sinclair Refining Company station on Speer Blvd. in Denver. Material used was white tile

Would Raise End Point Of Motor Gasoline

WASHINGTON, Oct. 18.—Two outstanding features developed at the meeting held at the Bureau of Mines offices here today to consider whether any changes should be written into the specifications prepared during the war by the president's committee on standardization of secifications for petroleum products, to be bought by the government for use in the various branches of its service.

One feature was a strong sentiment that the prescribed end point of gasoline should be raised, the representatives of the government being favorably inclined to the suggestion that the point at which 90 per cent of the gasoline must be over be raised from 437 to 492. The government technical men also favored fixing a point at which condensation must take place so as to have tests show results more definitely.

The second feature was the statement of Dr. George W. Gray, chairman of the technical committee of the committee on standardization of specifications for petroleum products that the committee will re-write the directions for making tests of motor gasoline so that even a child can carry out the tests, thereby simplifying the work of the testing officials who often have none too much knowledge of the work, and eliminating all chances of misinterpretation.

The meeting was called by the committee as an open session. All members of the industry and the state oil inspectors of various states were invited so as to have as wide a discussion possible of the subject from all angles.

The invitation was accepted by the state oil inspectors of Minnesota, North Carolina and Michigan, who took a prominent part in the discussions. The government's representatives expressed themselves in favor of state oil specifications and indicated that they would favor each state adopting the specifications formulated for the government.

In other words, their purpose is to lay down a reasonable and sane set of specifications and induce the legislatures of the states to enact these into state law to avoid the adoption here and there from time to time of freak requirements.

Men Of Its Own Making New Heads Of National Refining Company

MEN who long have been active in the management of the affairs of the National Refining Company, were promoted to the big offices of the company at the meeting of the board of directors at Cleveland, October 19. The realignment was occasioned by the death of J. I. Lamprecht, president of the company since its incorporation nearly forty years ago, who died suddenly last month of an operation for appendicitis in Atlantic City, where he was attending the recent annual meeting of the National Petroleum Association.

Frank B. Fretter, vice president, who has been with the company since it started, was elected president. W. E. MacEwen, for nearly twenty years in the company's employ, and best known as its traffic manager, was promoted from trom the secretaryship to vice president. W. H. Lamprecht, II, son of the former president, was promoted from treasurer to vice president. Both men had been on the board of directors for some time. Charles S. Smith, sales manager for Ohio and West Virginia, was made secretary, and Henry Heil, who practically has had charge of the physical properties of the company —the task of the usual secretary-treasurer — was elected treasurer. All of these new officers have been with the company twenty years or more, starting with it as boys. In addition to these, Ed S. Page continues as vice president, an office he has held for many years. E. L. Mason, vice president of the Cleveland Trust Company and son-in-law of the late J. I. Lamprecht, succeeded to the latter's position on the board of directors.

Frank B. Fretter

"This is the same staff that has been conducting the detailed affairs of the company for a number of years," announced President Fretter after the election. "It means that the same policies which, under Mr. Lamprecht had built up the company, will be continued. Because of the great growth of the company in recent years and what is in prospect for the immediate future, giving the men the real jobs as well as the responsibility and work will insure the greatest possible development consistent with good management."

Practically all these officers, with the exception of Mr. Page who was a steel man, might be said to have started in with the company as office boys with Mr. Fretter as the first official office boy, altho that was at such an early date that he was the one and only assistant to the president, bookkeeper, salesman, salesmanager and all other jobs combined. Had there been one bookkeeper even to be ahead of him his age then would have made him the office boy. Each of the other men have come into the organization at the bottom as boys and worked up, evening including W. H. Lamprecht, who likewise had to start at the bottom of the organization.

Mr. Fretter was born and reared in Cleveland and graduated from selling newspapers as a kid to the one job the company had outside of its plant, an outfit that hardly answered the name of refinery even in those days of tea-kettle plants. This was just prior to 1885, when the company incorporated some of its hopes and a little money the individuals borrowed, for $50,000. A couple of years later the hopes having risen as well as the business, the capital was increased to $100,000, after which every few years another hundred or two hundred thousand were added, until today the capital stock authorized and, which it had been reported frequently would soon be issued, amounts to some $35,000,000—a capital which even at that large figure will sell away above par.

Outside of some of the Standard Oil Companies there is not another oil company whose growth has been so steady and persistent over such a long period of time, and so free from sudden expansion. This has been due very largely to the company's paying so much attention to the marketing and refining ends of the business and not going in for production of oil from its own leases on any large scale until in the last few years. Both Messrs. Lamprecht and Fretter were salesmen first and selling oil in those early days was a task to delight the ingenuity of the most skillful.

The sales was Mr. Fretter's chief pet and hope, while Mr. Lamprecht gave his attention more to refining and financing. As refineries were added so the sales organization was increased until now the company has bulk tank wagon and truck stations in 93 cities and towns in the greater middle west and reaching south to Tennessee and Arkansas and into Oklahoma.

The outstanding feature of the company's sales policy and which was the chief work of Mr. Fretter, is selling a premium product at a premium price. Today it is the only company (known to this paper) to sell all of its kerosene and gasoline of premium grade at two and three cents a gallon above the price of its competitors. The same policy was followed as regards its other products, but as to them it was not so striking as for gasoline and kerosene which most people look upon as being like grain or salt or sand, of one grade.

This sales policy came about from a price war in Kansas City not long after the company was started, and just after it had established a bulk station there, with Mr. Gardner, still with the company, as its first manager. The market price was driven down to the cost of the oil, and then on down to below the cost. Mr. Fretter rushed out to view the wreckage. As he expressed it, they either had to get back to a profitable price or quit business. The company didn't have the money to stand any fight. Every day was likely to be the end. Arguing that if the oil was a good article it was worth a reasonable price, Mr. Fretter raised the price to just above cost and went out to the grocery trade himself, selling it on the quality of the product and on the company's fight against the declining market, pointing out that when they were gone, the market would come back. By dint of his personal salesmanship he got that station's market back to a normal

level despite the continued low price of competitors.

As the company had ambitions to expand, and no money to weather any more such fights it launched a policy of making a premium product and selling it for what they thought it was really worth and above the prevailing market on ordinary goods.

It was Mr. Fretter, too, who was one of the first if not the first oil man to start co-operative oil companies. Many of the company's division stations today are former co-operative companies. As it was necessary to sell the grocer personally on the quality of the company's kerosene and its quality price, Mr. Fretter at the same time sold him stock in a local oil company which the National Refining Company controlled. This brought in more capital, sewed up outlets for the company's product and sold the product at the same time. Many of those early customer-stockholders are today big outlets in their towns for the company and their proprietors have profited immensely by being in on the ground floor with the company's stock, as the capital stock has been doubled and redoubled a number of times. These companies were taken into the parent company, so that today all stations are operated as the National Refining Company.

This sales work built up a strong sales organization. The best indication of its strength is what it did for the Canadian Oil Companies, Ltd. This company had been kicking around the country for several years, in a bad way financially ,and every other way, and getting worse. Many interests had been asked to take it over but upon investigation declined quite emphatically. Finally a proposition was made the National Refining Company which was accepted and the National bought the company. At once the National sent over some of its trained men and installed their own brands and products and prices. Despite the task of reorganizing a practically dead business, and doing it on the premium price basis that a seasoned organization had made successful in this country, the National management made that company make a profit the first year and it has prospered every year since, while at the same time growing with great rapidity.

To back up this vigorous sales work the company has been adding to its refineries and its crude oil production. It now has refineries at Marietta and Findlay, Ohio, and at Petrolia, Ontario, and Coffeyville, Kansas. It has a big fleet of tank cars, a pipe line system from each refinery and it has been quite successful in developing production, particularly in Kentucky a year or so ago, and more recently in Marion and Butler counties, Kansas. It also has production in other fields.

Pawhuska, Okla., America's Monte Carlo

By H. L. Wood

Snapshot of crowd just as R. E. (Bob) Galer, head of the Land Department of Oklahoma Central Oil Company, is awarded Tract 30, the northwest quarter of Sec. 16-22-9, for $96,000. The Oklahoma Central, in conjunction with the Chestnut & Smith interest was one of the heaviest purchasers of acreage at this sale

PAWHUSKA, Oct. 12

IN March, 1896, when Hoke Smith, the Georgian, was President Cleveland's secretary of the interior, an an oil and gas lease covering like a blanket the entire Osage Indian Reservation of approximately 1,400,000 acres was granted the Foster brothers of Independence, Kan., and Westerly, Rhode Island, for ten years, with privilege of renewal. The tribes of Osages received an eighth of all oil that might be produced and for gas a hundred or two or three hundred dollars per well, if commercialized. At that date no producing oil or gas well had ever been drilled in the reservation.

In 1896 a test was drilled just northwest of Bartlesville and another near the Kansas line, both showing oil. For several years, with attempts to finance development, the reservation remained dormant. Then the Indian Territory Illuminating Oil Company was organized and blocks of leases given those who stood in the role of stockholders. Some of the grasping members of the association tried to monopolize the land and bickerings left the concern bankrupt, a bank at Westerly going broke trying to stem the tide of manipulation.

Finally, by the process of elimination and the sale of 50,000 acres of leases for enough cash to pay bills, the corporation settled into a business stride ,and actual development of the territory began. A strip nine miles wide and seventy miles long along the Cherokee nation line was subdivided into lots half a mile wide north and south and three miles east and west, and embracing approximately 1,000 acres each. For the first tier a price of $3 an acre was asked, $2 an acre for the second tier and $1 an acre for the third tier. All west of these lots was leased in 640-acre units at $1 an acre, if possible, for less in a pinch. T. N. Barnsdall acquired 330,000 acres and other blocks ranging from 5,000 up to 26,000 acres. Sublessees paid one-sixth royalty, the Indians got one-eighth.

In 1906, when the lease came up for renewal, many interests sought to secure the monopoly and a bitter fight ended in Washington when President Roosevelt, with Ethan Allen Hitchcock, as secretary of the interior, renewed the lease as to 680,000 acres roughly embraced within lines covering scattered development and the remainder of 720,000 acres was withdrawn from leasing. In 1916, when the second renewal was asked for, a great shake-up took everything from the Indian Territory Illuminating Oil Company except the maximum of 4,800 acres and a gas lease on several hundred thousand acres. The Barnsdall acreage was scaled down to 4,800 acres, the surplus, with or without production,

auctioned off, and a new era began. Lessees were required to pay annual rentals, all new leases were sold at first by sealed bids and five years ago the plan of public auction was adopted. The prices bid became a bonus, the Osage tribe was paid one-sixth straight royalty and for leases where the wells averaged more than 100 barrels each the royalty was one-fifth, or 20 per cent.

Making Reparation

Thus, after twenty years of almost free occupation of the Osage Indian reservation, the Interior Department has tightened up on Osage leases until the process of producing oil there is considered prohibitive by the majority of oil men who were not already engaged by previous investments that prompt them to stay with the game, no matter how irksome. Of course quite a number of tenderfeet, who have heard wonderful stories of the Osage oil field and have been attracted by the spectacular bidding occasionally indulged in by big operators who have money to outbid less fortunate bidders, indulge the universal speculative instinct and buy leases.

The remarkable ease with which bidders are attracted prompts the government to add new burdens at almost every succeeding sale, until it is very difficult for practical operators who have had experience in unrestricted territory and like to manage their own affairs to proceed under the never-ending roll of red tape and technical details that unwind from Washington. Every operator in the Osage reservation is penalized and has to chip in to the pot that is raised to make reparation to the fat and prosperous Osages for what they lost during the first twenty years.

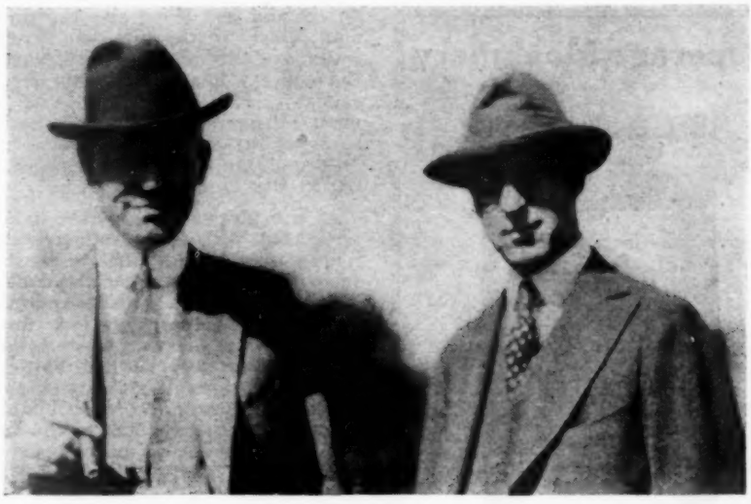
It is no exaggeration to say that present-day oil leases in the Osage are not really standard leases, but simply temporary easements. Standard oil and gas leases convey from the landowner to the lessee the privilege to locate and drill wells, to locate and build flow and storage tanks, to lay necessary pipe lines and use the surface of the lease for all ordinary and necessary purposes incidental to the work of development, for which the lessee pays the lessor such cash bonus for the privilege as may be agreed upon and the regulation one-eighth of all oil produced, or its equivalent in cash as the oil is sold, and either a royalty per well or so much per thousand feet, as metered for all gas removed commercially from the lease. Other stipulations protect the landowner from damage to the surface improvements, from failure to drill offsets and all legitimate work as development proceeds.

In the Osage country now the lessee must pay the tribe $100 for each well location, $100 to $300 for each tank location and pay for pipe line space. On homestead leases the lessee must dicker with the allottee individually for every location and these location bargains must be approved by the secretary of the Interior Department before the lessee can even make a move to do anything with the lease he bought in open bidding and—as happened today—paid as high as $50,000 for the mere privilege of testing it for oil.

The lease thus purchased cannot be operated until a lot more money is paid before work starts. After production has been developed or drilling started a number of Interior Department agents and inspectors watch operations and insist that certain alleged scientific details be followed whenever gas, water or oil is found. Any failure to follow this endless succession of petty details is the excuse for either a reprimand or a fine. The Osage allottees have been pampered so much and have so much money thrust upon them that they have grown finical and exacting, continually running to the agency to complain and to ask for more money.

At each recurring lease sale it takes half an hour or more for the superintendent to tell bidders, and operators, that he is getting mighty tired of trying to overlook careless operations and to suggest that more fines, reprimands and penalties will be added without warning. To listen to these scoldings one gathers the impression that it is an awful and mighty unpleasant and embarrassing chore to take $250,000 for a 160-acre lease with more limitations than a railroad ticket, collect 20 per cent of oil money and all the money exacted for locations and camp shacks, opening and shutting gates and bidding a grouchy Osage good morning in a pleasant voice. If it keeps on, a fellow, in a year or so, before he approaches a blanket Indian, will have to wear evening clothes, deposit his hat and goloshes and when he leaves tip the landlord with a hundred-dollar bill.

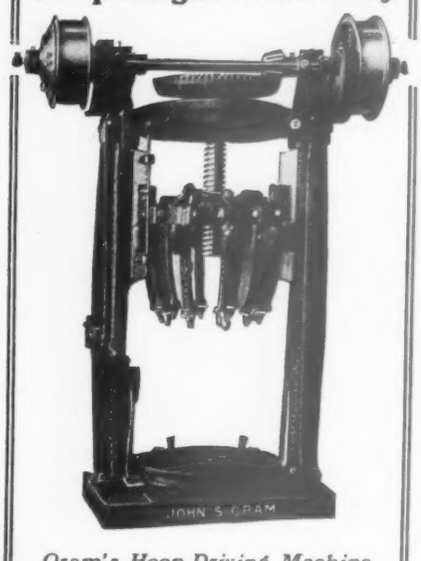
In surrounding Indian territory—in the Cherokee, the Creek, the Choctaw, Chickasaw and Seminole nations—just ordinary human rules pertain to getting



"They're off at Pawhuska"—L. E. Phillips, vice president of the Phillips Petroleum Company (right);and George Bole, large Independent producer and casinghead gasoline manufacturer, reputed to have a net income of $400,000 annually

Right—Henry McGraw, second vice president of the Gypsy Oil Company and Gulf Pipe Line Company of Oklahoma, in charge of Mid-Continent operations, assumes an attitude of watchful waiting; (center) Nelson K. Moody, vice president and head of production department of the Prairie Oil & Gas Company; (left) Dana H. Kelsey, Tulsa, in charge of Mid-Continent operations of Prairie Oil & Gas Company

Cooperage Machinery



Oram's Hoop Driving Machine

Stave—Heading—Hoop
and
Barrel Machinery

The John S. Oram Co.
1314 East 53rd St. Cleveland, Ohio

Independent
Refining Co.
Oil City, Pa.

Refiners of
Pure
Pennsylvania
Crude

Gasoline Kerosene
Fuel Oil Wax
Lubricating Oils

an oil and gas lease and the poor Indian must hustle his own grub and water and do his own dickering with the white vandals, the remorseless marauders. It is this fact that causes most oil operators to avoid the Osage reservation, which has come to be known as the greatest hold-up oil country in the United States.

It is a pleasure to operate in Mexico compared with the Osage reservation. There isn't a detail that is overlooked, from the time the superintendent starts telling how docile and halter-broke the prospective bidder must be, until the last location on the lease is drilled; and the more docile and halter-broke the Osage operator becomes the bigger load they pile on—probably because it is so easy. Even the auctioneer is beginning to grow peevish and to browbeat and scold bidders because they hesitate a second when contemplating a five-thousand-dollar raise over a hundred-thousand-dollar bid.

It's Getting Aristocratic

One must bare his head and soul and come with clean hands and face, a shave, haircut and shine now to meet favor with the U. S. Monte Carlo at Pawhuska. A professional poker-player or crap-shooter is knocked silly at the Pawhuska gambling-palace. An old-fashioned keno game, where the house takes 15 per cent from every pot, is a snap compared with modern Osage lease sales. It used to be—and is now everywhere outside of the Osage—that when a fellow bought a lease he had the gas as well as the oil; but no more, for the gas is held out and sold separately.

Some dry year a new rule will be made that the oil men will have to drill water wells on every tract and give the Osages 20 per cent of it. He already is compelled to construct roads, build schoolhouses and make the reservation habitable, in addition to all the millions he pays in bonuses, royalties, fines and location dues. The nearly four million dollars contributed to the Osages—$1,500 per capita, at the latest sale—is segregated immediately to each Indian, who is not even taxed, as other Indians and common white trash are taxed. The Washington government has somewhere between twenty and thirty billion dollars cash in escrow for the about 2,300 Osages, and they are given in cash quarterly about $15,000 each, annually—in 1920 its $18,500 each. But they are not allowed to spend any of it for roads, school-houses and community betterments.

Where Sympathy Belongs

Getting this complaint out of my system is not by way of sympathizing with those credulous mortals who play the Osage game, with the cards all stacked against them. They go into it with their eyes open up to the minute they are awarded a lease, and they seem to like it, which is all right with me. The injustice of the monopoly is that hundreds of deserving oil operators and tenderfeet are not able to gamble in this aristocratic gambling reservation, and thus lose their chance to develop good oil territory.

The government has become literally obsessed with its money-getting schemes and loses sight entirely of the great responsibility it owes its citizens to protect them against monopolization of natural resources. Granting that in years passed individuals and corporations took undue advantage and monopolized many things, it does not right any wrongs for the government at this late day to segregate public domain and shut out every citizen, because of lack of coin, from an equal opportunity to profit by development.

The October 12 sale was unique in some respects. The big operating companies placed only a few bets, excusing themselves by saying that their credit had been exhausted and they can no longer borrow money. Some bidders, having made small bets in past sales, appear to have won and made bigger bets than ever before. Some new players made bets. The payment of $3,993,250 for 236 tracts of 160 acres each, with as high as $271,000 for one tract, if it means anything, indicates that all the talk that money is tight and cannot be had in buncombe.

J. George Wright, superintendent of the Osage Indian Agency and "Watch-dog" of the Osage treasury, and Col. E. Walters, of Skeedee, Oklahoma, government auctioneer, locating his bidder. Col Walters is seen here garbed in a resplendent silk shirt, "Out-Osaging the Osages"

Gasoline Economy Now Consideration In Designing Automobiles

THAT the American motorist will be using a very different type of automobile a few years hence appears to be one point upon which the oil industry and the automotive industry agree. Eventually he may be using a different kind of fuel to propel a machine which performs much as the ordinary automobile does now, but that is a long way off to say the least, because science is making slow progress toward evolving a cheap and satisfactory substitute for gasoline. On the other hand the demand for gasoline is speedily and surely drawing up abreast of the available supply.

Altho at the present time the industry is enjoying a little rest from the losing battle to keep a supply of motor fuel in storage, it is apparently a short recess. Fall in the price of automobiles, it is likely, will stimulate their sale, and the coming of spring will find cylinders in unprecedented millions eating up gasoline stocks. Suppose that in the year of our Lord, 1921, we put on the brake at the filling station and the pump boy explains that he is out of gas, and does not know when he will have any more. Then even the most short-sighted motorist will decide that he could use very little gas to big advantage.

The number of miles per day that the average American travels in the interest of business is not likely to be reduced. It may be expected to increase. Industrially, the horse is not coming back. Steam railways and streetcars occupy extremes of impracticality, when viewed from the standpoint of the motorist. In short, motor-miles have become a necessity to business. Yet it does not take a prophet to foretell that the law of supply and demand is about to be enforced on the motor-loving public. It is up to the motorist to decide whether he shall ride in an automobile much or little in the next few years by saving fuel.

The Conservation Problem

Just how this conservation is to be effected is a thing still to be solved, yet the motorist is coming to it. It may be that he will get into the new condition by gracefully shifting gears or he may come to it suddenly like ramming into a post. Again, that is all at the discretion of the motorist. But it is safe to say that a little foresight will prevent much unnecessary friction.

In spite of the fact that the biggest distributors of petroleum products in America have been spending much money for advertising, trying to educate the public to use less of their merchandise, more is being used. Should the time ever come when there is not enough to supply everybody's needs, there is sure to be a spasmodic tirade launched against the oil industry, by persons who are always ready to accuse somebody of holding-out on them. That, however, is inconsequental. The one competent fact is that experts in the two industries concerned agree in the premises, as follows:

"In a few years the American people will be using a different automobile with a similar fuel, or they will be using a similar automobile with a different fuel, or they will be walking."

In the September 8 issue of **National Petroleum News**, W. C. Teagle, president of the Standard Oil Company of New Jersey, advanced the theory that the popular adoption of a lighter and less powerful automobile was the only solution to the gasoline question, immediately practicable. He pointed out that since August 1, 1919, the United States has been trying to meet a 1,159,016-barrel daily demand for crude oil with an average daily production of 1,103,085 barrels. The following paragraph of his treatise in a fair way illustrates his belief:

Fallacy of Heavy Cars

"The United States is the only country in the world that insists on heavy, high-powered motor cars. It is time that we stopped it. The man who gets from six to eight miles from a gallon of gasoline in order to have a reserve power for occasional use that will enable him to push his car along the road at from 50 to 75 miles an hour is an offender against the public good. For practical purposes an automobile that makes 25 to 30 miles an hour would serve every need. Such a car could be made to average more than 25 miles per gallon of gasoline."

A special distribution of Mr. Teagle's article was made with a view to getting the opinion of a few automotive engineers on the same subject, and in a vast majority of the cases, the engineers who expressed themselves about it agreed with Mr. Teagle. There is no reason to believe that some wizard is going to come forth with a gasoline substitute immediately. There is no reason to think fewer cars will be used. Insofar as authorities can tell, oil production is approaching its peak point. The Teagle idea is to make the existing supply go around. The engineers agree that it can be effected by altering the engine to get more miles out of fewer gallons.

When automobiles first became a factor in the nation's transportation, fuel was a secondary consideration in computing the expense of operating a machine. Gasoline was plentiful and cheap. Tires too could be worn out and replaced with a nominal outlay of cash. But when tires became expensive and it was found that the mechanical construction of a machine had a direct bearing upon tire mileage, automotive engineers came to the front with cars which help the tires to endure. That same thing is taking place now with reference to the cost of fuel. This is being done at the demand of the buying public. A prospective buyer today is more likely to ask "How many miles per gallon," than "How many miles per hour?"

The oil industry is doing its share toward getting more fuel for the world's motors. In the face of strange "reconstruction" legislative hindrances, prospectors are seeking new regions to exploit. Producers are using every means of getting maximum recovery from wells already drilled. Precautions are taken to prevent waste of oil in transportation. Efficiency in refining has vastly increased the average recovery of motor fuel from crude. The most recent product of the Packard factory shows that the oil industry is not without cooperation. The new Packard is being heralded in national advertising as a machine that will get 20,000 miles out of one set of tires and 17 miles out of one gallon of gasoline. This indicates clearly that the automobile industry is making progress to the end that gasoline may be used for all the motive force it will produce.

Depend On Fuel Supply

An inclosure in a letter from the chief engineer of the Franklin Manufacturing Company, makers of the Franklin car, quotes the head of the concern as saying that the day is approaching when many more automobiles will be required for this country's transportation needs than are now in service. "The achievement of this development is vitally dependent upon an

What the Automotive Engineers Think

The motors used in the present automobiles are too powerful for our requirements.—E. Planche, Dort Motor Car Company.

It is entirely unnecessary to sacrifice any riding ease by lightening a motor car.—H. B. Massey, Holmes Automobile Company.

If the buying public would demand less in the way of accelerations, hill climbing, speed and the ability to jam the throttle wide open, it would be a simple matter to produce an automobile that would operate at from 35 to 40 miles to a gallon of gas, using the present-day fuel.—A. C. Hamilton, Oakland Motor Car Company.

We are trying to build a product which will do, at least in a limited way, just the things which have been outlined in Mr. Teagle's article as desirable. —L. M. Stellmann, H. H. Franklin Manufacturing Company.

This matter is entirely in the hands of the automobile-buying public. They at present demand a high-powered car capable of practically taking every hill between Chicago and New York on the main highway on direct drive, and no automobile manufacturer can sell a car that cannot do this.—D. Fergusson, Pierce Arrow Motor Car Company.

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adequate fuel supply at a cost that will not be prohibitive. The motor car designer must be depended upon for the solution by building the car of the future to use less gasoline.

"The accomplishment of this object involves the reduction of weight, the limitation of the size of cars and a closer adaption of the power plant to the actual performance requirements of an automobile. American engineers have before them the passing of the so-called high-powered car. It is realized that any excess or reserve of power over ordinary requirements is at the expense of an already limited gasoline supply.

"The saving of fuel in one year's time, provided all cars were built to average 20 miles to the gallon of gasoline, would at this time supply 700,000 additional automobiles. It is not a far cry to expect our experiences to parallel closely that of Europeans who have always been compelled to stretch their fuel supply." In addition to these figures, credited to H. H. Franklin, the engineer raises the salient point that road improvement is vital in the conservation of motor fuel.

Chief Engineer Ferguson, of the Pierce-Arrow Motor Car Company, suggests that the driver of the lowly American "flivver" would not tolerate such an automobile as is used commonly in Europe, altho they are capable of doing probably 30 or 35 miles on a gallon of gasoline. "These cars," he says, "are generally fitted with four speed transmissions and the driver must continually operate his change-speed mechanism. These very small European cars sell at two or three times the price of a Ford. Many of these cars can not climb a five per cent grade on direct drive. It would take almost all the pleasure out of automobiling for the average driver in this country." Altho he did not mention the fact, it is true that the English gallon is equal to 1.20032 American gallons, or 20 per cent more and after all the Europeans may not be far in advance of the industry in the United States, in their attainments at saving gas.

20 to 25 Miles Best Speed

E. Planche, chief engineer of the Dort Motor Car Company, writes in part as follows: "I have received the article by W. C. Teagle and from an engineering and practical standpoint, I thoroly agree with him. Everybody knows that the speed laws of the country do not tolerate a speed above 30 miles an hour on our roads. I have just completed some very interesting tests on gasoline consumption which clearly show that the best and most economical speed is between 20 and 25 miles an hour where an average economy between 22 and 24 miles to the gallon can be realized. It must be remembered, however, that some of the largest manufacturers of light cars do not average more than 15 or 16 miles to the gallon, which, owing to the light weight of their automobiles, shows a very inefficient motor. As their cars are used in the greatest numbers, they are the chief offenders in wasting the gasoline. A car which does not weigh over 1,800 pounds should give from 25 to 30 miles on the gallon economy. A car weighing between 2,000 and 2,500 pounds can give between 20 and 25 miles to the gallon. Any car which does not come up to these performances ought to be redesigned for the general good of the country and the conservation of our resources in oil."

Chief Engineer Hamilton, of the Oakland Motor Car Company, asserts that the car owner who does not enlighten himself upon methods of conservation is a party who does great damage to the gasoline supply. "The carburetor seems to be the target at which every car owner is inclined to take a shot, whether he knows anything about it or not," he says. His inference is that the car owner will begin to think about economizing with the engine he already has, before he will demand from the manufacturer a more efficient motor.

A word of encouragement to the automobile owner of tomorrow is found in the letter from Chief Engineer Massey, of the Holmes Automobile Company. He takes issue with Mr. Teagle on one point, namely that a light car means a rough rider. He enumerates five principles of mechanics which, he says, if they are given the same consideration in a light car as in a heavy one, the car will be practically as easy riding. "The usual practice," he says, "is to consider cheapness in the light car rather than lightness itself, with the result that the general public has the same impression as Mr. Teagle, that ease in riding must be sacrificed in reducing weight." Furthermore, he considered that three speeds are plenty and that holding a motor speed to 500 revolutions per minute at 20 miles per hour is not only unnecessary in order to obtain excellent economy, but undesirable.

The foregoing quotations are not the only expressions brought forth from automotive engineers of the country by Mr. Teagle's expression of opinion.

Besides that a large mass of opinions from motor manufacturers and designers was recently compiled by the American Petroleum Institute by writing letters to members of the Society of Automotive Engineers. Many of the replies to this letter have been published in pamphlet form unaccompanied by the name of the authors. In main, however, their opinions are in accord with those published here. One new idea brought out by the institute was that possibly many industries are now using petroleum for fuel which could almost as economically use another kind and it was suggested that such industries might be persuaded to discontinue the use of oil for the betterment of motor transportation.

The general belief that it is the public that is concerned most deeply and that it is in the power of the public to save itself from predicted inconvenience, is brought out most clearly in one of the letters written to the institute. It follows:

"In the design of passenger motor vehicles, the type of public demand is the dominating factor in fixing the design. Up to the present, the cost of fuel has been merely one of the elements in the operating cost, and not at all the predominating element. Consequently there has been no wide-spread demand for markedly economical types of vehicles.

"On the contrary, the demands have been: luxury which entails weight; high speed possibilities, and great range of operation without gear shifting, requiring wide range of motor speed and good pulling power in high gear at low car speeds. These characteristics, which do not favor economy, have determined our present motor car design.

"It is possible, and from the engineering standpoint very attractive, to build cars possessing comfort and good speed possibilities and using a small high compression type of motor. Such cars are in extensive use in Great Britain and the European countries and are very economical in the use of fuel. However, frequent use of the gearbox is necessary to secure the degree of flexibility and pulling power attained

here in high gear by the use of less economical motor types.

"It is undoubtedly true that we will come to the building of such types, either thru high cost of fuel, restricted consumption thereof, or through a campaign of education which will lead the public to accept such types before being forced to do so."

Denver Oil Convention Is Recorded In Movies

The recent Denver convention of the Independent Oil Men's Association is unique in respect to most conventions in that it is for all time on record for the benefit of future generations thru the medium of the motion picture camera.

The North American Car Company, Chicago, had a representative, Erwin R. Brigham, and a movie camera operator present from the time the special train of oil men pulled out of the station at Chicago bound for Denver. Brigham and his movie man were always with the crowd. When the specials stopped en route from Kansas City to Denver and the travelers piled off to stretch their legs the movie camera was working. When the Denver reception committee met the trains at Denver and paraded to the hotel it was on the job. Whenever a group of oil men left the hotel or the Denver auditorium, Brigham and his movie camera outfit were liable to be there putting them on record. In the mountain trips, at the meetings, at the banquet, the movie camera was clinking.

"There will be about four reels of the important events of the convention, many closeups of well known members of the oil fraternity and supply men, with pictures in and about Denver and the mountains, when the film is completed," Bingham stated.

"Our company expects to have the film completed in a short time, and arrangements can be made to show it in oil centers where groups of the fraternity may be gathered."

Pictures of the special trains, the reception at Denver and interesting closeups of various individuals and scenery about the city were developed and shown to those attending the convention during the banquet night and at one of the moving picture theaters in Denver later. This is said to be the first time motion pictures were ever taken of a convention and developed and thrown on the screen before its close. The crowd viewed them with great enthusiasm.

The oil-shale areas of Alberta county, New Brunswick, have recently been inspected by representatives of both British and American interests. According to the Dominion Department of Mines, samples taken from Albert county have yielded 60 imperial gallons to the ton. The concession for the development of natural gas in this same area is held by the New Brunswick Gas & Oil Fields (Ltd.), of Moncton, whose activities are confined to the development of natural gas, but it is possible that shale-oil production will be attempted in the near future either by this company or by other interests.

Trade in kerosene in Holland has now returned practically to its normal conditions. During 1919 between 4,500,000 and 5,000,000 gallons were imported.

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COMPOUNDING GREASES is a specialty of ours. We'll tackle any formula and guarantee you satisfaction.

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Jobbers will find our fully equipped compounding plant a valuable source of uniform-quality greases.

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Soluble Oils	Belt Dressing	Gasoline	Gas Oil
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Roof Cements	Greases	Naptha	Mineral Oils
Auto Soaps	Waxes	Fuel Oil	Cylinder Stocks

Advance Oil Company

Oil City, Pennsylvania

United States Shipping Board Emergency Fleet Corporation,
Washington, D. C.

Lubricating Oil Tenders Invited by United States Shipping Board For Period of One Year from November 24, 1920. Bids To Be Opened October 18, 1920.

The Division of Supply and Sales reinvites tenders for furnishing such quantities of lubricating oils as may be required for period of one year from November 24, 1920, for use of all ships under its ownership or control. Classes of oils, estimated quantities and ports at which deliveries are required, are as follows:

Classes of Oils		Estimated quantities (gallons)
1	Steam Cylinder	89,901
2	Superheat Cylinder	18,826
3	Ice Machine Cylinder	42,941
4	Marine Engine for all Wick and Sight Feed Systems	1,020,638
5	Light Oil for Forced Feed, Turbines, Electric Generators and Motors	184,165
6	Medium Oil for Forced Feed and Turbine Reduction Gears	511,321
7	Heavy Oil for Forced Feed and Turbine Reduction Gears	910,078
	Total	2,777,870

PORTS

Portland, Me.	Brunswick
Boston	Jacksonville
Providence	Tampa
New York (All points New York Harbor)	Pensacola
Philadelphia (All points Delaware River & Bay)	Mobile
Baltimore	New Orleans
Norfolk (Including Newport News & Vicinity)	Port Arthur
Charleston	Galveston
Wilmington	Houston
Savannah	Beaumont

In addition to the above mentioned ports, tenders will be considered at all other United States ports on the Atlantic and Gulf Coasts, from which bidder is prepared to make delivery.

For further information and proposal forms, address

L. VAN MIDDLESWORTH,
Manager Purchasing Department, Division of Supply and Sales, United States Shipping Board Emergency Fleet Corporation, Washington, D. C.

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OIL AND GREASE CANS

AMERICAN CAN COMPANY

SALES OFFICES IN ALL PRINCIPAL CITIES

Warren Oil Company Opens Pacific Office

WARREN, PA., Oct. 15.—The Warren Oil Company, of Pennsylvania, has announced the opening of a California sales office in the Van Nuys building, Los Angeles, in charge of H. A. Frederick.

Mr. Frederick is a man of long experience in the oil industry, and until recently

H. A. Frederick

served as wholesale manager of the Steiner Oil Corporation in Dallas, Texas. He is well known thruout the Mid-Continent field.

The primary purpose in placing an office on the Pacific coast is to facilitate the handling of Pennsylvania lubricants as well as the purchase for eastern distribution of such California products as can advantageously be handled.

No Yellow Fever In Tampico At Present

By Special Correspondent

TAMPICO, MEXICO, Oct. 12.—It has been officially announced that there is not a single case of yellow fever in Tampico or the oil fields. In Tuxpam, there have been 33 cases, of which 24 have died.

The remainder are under treatment or recovered. On October 8 there was one death, one new case and four under observation.

In Tampico there has been one death and one case of yellow fever. The latter has recovered and is now living in Mexico City.

The United States Health Department has sent two experts to Tampico to assist in preventing the spread of the disease to the oil fields. Should it reach the big oil camps to the south, the oil exports to the States would fall off millions of barrels.

UNITED STATES SHIPPING BOARD

Offers Three Hundred and Seventy-Seven Ships For Sale.

Bids will be received on a private competitive basis from now on in accordance with the Merchant Marine Act at the office of the United States Shipping Board, 1319 F street N. W., Washington, D. C.

The three hundred and seventy-seven ships offered for sale consists of ninety-two steel ships and two hundred and eighty-five wooden steamers.

The steel steamers are both oil and coal burners. The board has established a minimum price on these vessels.

TERMS ON STEEL STEAMERS

10% of the purchase price in cash upon delivery of the vessel; 5% in 6 months thereafter; 5% in 12 months thereafter; 5% in 18 months thereafter; 5% in 24 months thereafter. The balance of 70% in equal semi-annual installments over a period of ten years; deferred payments to carry interest at the rate of 5% per annum.

* * *

The two hundred and eighty-five wooden steamers for sale consists of ten different types as follows: Nine Daugherty Type; Seventeen Ballin Type; Ten Peninsula Type; Six Pacific American Fisheries Type; One Allen Type; One Lake and Ocean Navigation Company Type; Thirteen McClelland Type; One Hundred and Eighty-six Ferris Type; Thirty-one Hough Type; Eleven Grays Harbor Type.

TERMS ON WOODEN STEAMERS

10% cash on delivery. Balance in equal semi-annual installments over a period of three years.

Bids may be submitted for one or more vessels or for any combination of above vessels, and must be accompanied by certified check made payable to the U. S. Shipping Board for 2½% of amount of the bid.

Bids should be submitted on the basis of purchase "as is and where is."

Further information may be obtained by request sent to the Ships Sales Division, 1319 F Street N. W., Washington, D. C.

The board reserves the right to reject any and all bids.

Bids should be addressed to the UNITED STATES SHIPPING BOARD, WASHINGTON, D. C., and indorsed "BID FOR STEAMSHIP (Name of Ship)."

Operate Diesel Engine Uninterrupted 30 Days

Discussing "The Utilization of Heavy Oils" before the British Institute of Technologists, at the September meeting, Prof. J. S. S. Brame, F. C. S., mentioned, as illustrative of the durability and reliability of the Diesel and sem-Diesel engines, the performance of a Sulzer 1,000 horsepower Diesel engine at the lead-smelting works of the Burma Mines, Ltd. During 1917 and 1918 the engine ran day and night almost continuously; in four separate months the running was completely uninterrupted. The actual working hours in 1917 were 97.5 per cent, and in 1918 97.6 per cent, of the 8,760 hours of the year. The many advantages of the Diesel engine, other than those of simple fuel economy, had led to its wide adoption both for land surface and marine purposes. Numerous sets had been in operation in small and medium-sized electric generating stations thruout the country.

For marine purposes the Diesel engine had found extensive application in submarines, and large numbers of trading and other vessels had been fitted, or were building, in which Diesel type engines furnished the motive power.

Important questions, as regards marine practice, were those of weight and space. Admiral Sir G. Goodwin had stated recently that in the oil-driven ships running for commercial purposes the machinery weight was of the order of 280 pounds per horsepower. Economy of space was to an extent discouraged by the rule requiring for the ordinary steamer that 13 per cent of the total space shall be devoted to the propelling machinery, and however good the reasons for that might have been in the case of steam, it was difficult to see why it should not be speedily modified for oil-driven vessels.

The bulk of the world's commerce was carried in the medium and smaller-sized steamers, and for those the Diesel engine offered such advantages that those best in a position to judge were confident of its ultimate almost universal adoption in such vessels. But the many advantages the Diesel engine offered, particularly in fuel consumption, had led some enthusiastic fuel economists to call for the total abolition of such water as was entailed in the direct combustion of oil. Whilst with oil-fired boilers in comparison with coal the advantage was as 1 to 1.5 in favor of oil, if the oil was used in suitable internal combustion engines the ratio was 1 to 4. Approximately two and a half times as much oil was required per horsepower when burnt for steam-raising as was required when the oil was used directly in internal combustion engines.

The undoubted great economy of oil used in internal combustion engines was universally known, but it had unfortunately led some who did not realize the limitations of the oil engine to more or less demand the total abolition of such waste as was entailed in burning oil under boilers; they deplored the fact that such a vessel as the "Aquitania" should have been converted to an oil-fired ship instead of an internal combustion engine ship. On the authority of the engineer-in-chief of the navy, the largest Diesel engine cylinders in any marine unit afloat in 1919 was only 400 horsepower. How the 62,000 horsepower or so required for the great ocean liners would be arranged

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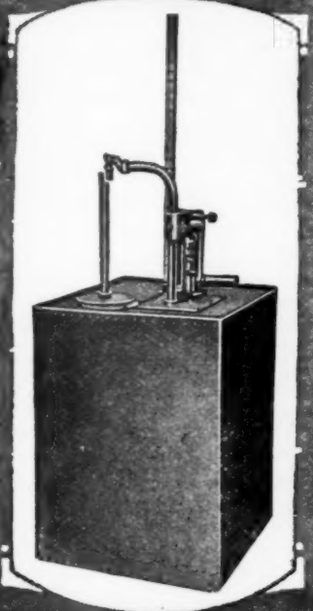

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for, the number of units, their disposal on a very limited number of shafts, considerations of weight and space, were points which they had never considered. As Admiral Goodwin had said, "A great deal more work would have to be done before it could be said that it was economical to replace steam machinery of high power by internal combustion engines."

Let people be content, therefore, to leave to the Diesel engine a great future in the mercantile marine, without endeavoring, in the light of our present stage of development, to assign it for use in every conceivable type of vessel. No one knew better than the engineers most intimately connected with it its ensured great future and its limitations.

Bedford Made Head Of Chamber Of Commerce

WASHINGTON, Oct. 15.—A. C. Bedford, chairman of the board of directors of the Standard Oil Company of New Jersey, has been made chairman of the executive committee of the Chamber of Commerce of the United States. Mr. Bedford succeeds Frederick J. Koster, of San Francisco, who resigned to return from New York to the west to devote his entire time to his business.

Mr. Bedford is at present in Paris attending the first meeting of the board of directors of the International Chamber of Commerce. He is vice president of the International Chamber for the United States.

Thinks Lull In Demand Is Merely Temporary

CHICAGO, Oct. 16.—The following statement has been given out by David Copland, vice president and general manager of the General American Tank Car Corporation:

"We feel that at this time it is appropriate to comment on the present general conditions, as we see them.

"Our experience of over twenty years in the tank car industry has naturally brought us in very close contact with the oil trade, and has given us a good insight into what, in our opinion, may or may not develop in the near future.

"It seems that right now there is an apparent temporary cessation in the oil trade in general and no apparent good cause for the same. Our opinion that this slowing up in the oil trade is merely temporary is founded on our experience that in the last few years similar conditions have arisen, only under present conditions reliable information given us would indicate that the demand is greater than ever, but merely held back.

"During these temporary lulls we have found the oil trade extremely reluctant in arranging for equipment necessary to protect the increased business which developed sooner than anticipated, the result being that they found themselves very much embarrassed by lack of available cars for prompt use and the consequent serious losses due to their inability to take care of any possible expansion."

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Amber Oil
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ELDRED SPECIAL is used to boost the quality of other oils—too good to be used alone. Specifications are; 40-45 Cold Test; 140-50 Viscosity at 212°; 600 Fire; 540 Flash.

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SUPERIOR OIL WORKS

MUTUAL REFINING CO.

WARREN, PA.

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Pure
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Will Scaling Assets Follow Price Decline?

Will the rapid declines in raw material prices, that have set in since the first of the year, affect the inventory valuation of stocks of oil and supplies held by oil companies? So far, the materials reached by the price decline have been silks, wool, leather, rubber, cotton and other lines, and resultant cuts in finished goods more recently have opened up the question whether or not some large inventories accumulated before liquidation set in will have to be readjusted and possibly scaled down. In this matter, oil inventories are not singled out, nor are present figures called in question.

A recent tabulation of the inventories of twenty-one industrial companies, including leather, chemicals, oils, motors, graphophones, alpacas, cigars, soaps, drugs, and electrical supplies, show aggregate inventories on June 30, 1920, of $719,923,328 compared with $537,727,198 as of December 31, 1919, or approximate dates. In the following table is given a like comparison as to six oil companies whose inventories as of June 30, 1920 (unless otherwise designated), and of December 31, 1919, are available:

	June 30 1920	Dec. 31 1919
Galena Signal Oil Company	$7,651,551	$2,875,632
Cosden & Company	7,400,444	4,327,992
Pure Oil Company	(a) 1,209,072	(b) 607,661
Tide Water Oil Company	14,451,523	14,161,207
White Eagle Oil & Refining	(c) 1,964,118	(d) 1,588,203
Union Petroleum Company	5,654,742	.....
Total	$38,331,450	$23,560,695

(a) At March 31, 1920. (b) At November 30, 1919. (c) At July 31, 1920. (d) At February 29, 1920.

Inventories of the following companies showed as of December 31, 1919:

Atlantic Refining Company	$22,053,874
Associated Oil Company	6,043,919
Continental Oil Company	4,327,992
Empire Gas & Fuel Company	14,540,130
General Petroleum Corporation	2,509,486
Gulf Oil Corporation	28,210,367
Marland Refining Company	*1,690,573
Mexican Petroleum Company	†4,893,842
Midwest Refining Company	8,331,383
Okla. Prod. & Refg. Company	(x) 607,661
Paragon Refining Company	(z) 1,740,194
Phillips Petroleum Company	605,518
Pierce Oil Corporation	(y) 12,747,124
Pure Oil Corporation	‡11,502,055
Simms Petroleum Company	694,399
Sinclair Consolidated Oil	31,365,595
The Texas Company	86,146,419
Union Oil of California	12,013,321
Total	$249,329,453

*Recent appraisal not yet made public. †At September 30, 1919. ‡At March 31, 1920. (x) At November 30, 1919. (z) Inventoried "at and below cost" as of October 31, 1919. (y) At August 31, 1919.

The Standard Oil group showed oil stocks and merchandise on hand, all at December 31, 1919, as follows:

Standard Oil Co. of California	$ 35,184,439
Standard Oil Co. of Indiana	52,046,052
Standard Oil Co. of Kansas	2,328,277
Standard Oil Co. of Kentucky	5,970,533
Standard Oil Co. of Nebraska	1,893,955
Standard Oil Co. of N. J.	185,750,373
Standard Oil Co. of N. Y.	98,232,303
Standard Oil Co. of Ohio	5,583,097
Prairie Oil & Gas Co.	26,572,500
Humble Oil & Refg. Co.	2,178,176
Vacuum Oil Company	24,846,858
Total	$440,286,563

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Announce—That in addition to the Franklin 500 Cold Test Bright Stock, recently tendered, they are offering to the trade a quantity of the Famous Franklin High Viscous Neutral, carrying the following specifications:

Gravity....30-31	Fire.....450-460	Cold.....25-30	Emulsion..OK
Flash.....390-400	Viscosity.300@100	Carbon.....005	

Samples and quotations gladly furnished upon request.

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PENNSYLVANIA STEAM REFINED CYLINDER STOCKS
Fire tests 600°, 635° 650°, High Viscosity

VISCOUS PALE NEUTRAL OILS
Color No. 3 a specialty. 180, 200, 220 viscosity

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52-54 Gravity. Free from oil

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Franklin, Pennsylvania

Established 1877

FOR 43 years we have consistently stood back of every shipment of our reliable Pennsylvania petroleum products. Our guarantee of quality is attested to by every one of our customers.

We have an efficient traffic department and ample tank car facilities always at your service.

In these three tabulations are inventories aggregating $727,947,466, in all probability now not far either side from three-quarters of a billion dollars. That the great bulk of them will require no disturbance is quite probable from the fact that the Standard Oil companies, as well as many others, make a rule of inventorying at or below cost. The figures are submitted, however, as having an important bearing on a very momentous subject.

Fayette B. Dow Serves Petroleum Institute

WASHINGTON, Oct. 16.—Fayette B. Dow, Washington representative of the National Petroleum Association and the Western Petroleum Refiners' Association, has consented with the agreement of the three organizations concerned to be the representative of the American Petroleum Institute also. Until now the institute has not had a Washington representative, but recent business developments has made it necessary that it have some representation there.

Officials of the institute state that they are fortunate in procuring the services of a man who has already rendered invaluable service to the oil industry in govermental affairs. Mr. Dow is an attorney with offices in the Munsey building. He does not cease to represent either of the other two societies of oil men, but the acquisition of the new assignment will rather have a tendency to make him devote more of his time to the interest of the industry.

Members of the American Petroleum Institute are now being invited to call upon Mr. Dow, make his acquaintance, avail themselves of his usefulness in connection with problems arising in the capital relating to petroleum. The membership is being requested, incidentally, not to expect any services from the new representative on cases of a trivial or purely personal nature.

The soviet government, it is stated, has entered into negotiations with the German and British governments for material with which to exploit the Russian oil fields.

The article entitled "Overload, Piping and Filler Plug Size Vital Points on Tank Trucks," carried on page 43 of the September 29 issue of National Petroleum News **thru an error was credited to a discussion before the Division of Standards of the Society of Automotive Engineers.**

It is one of a series on the operation of trucks in the oil industry being prepared by F. A. Bean, an engineer with the Wayne Oil Tank & Pump Company, Fort Wayne, Ind.

Ardmore Producers Get Gas Increase

Staff Special

ARDMORE, OKLA., Oct. 14.—Announcement is made by the Lone Star Gas Company of Dallas, Texas, of an alvance of 4 cents in the price of natural gas in the Ardmore district. This brings the price of gas at the well up to 10 cents per thousand cubic feet. The advance was effective October 1.

In announcing the advance, the company states that it is made possible thru the recent increase granted the Lone Star in Dallas, Ft. Worth and other Texas cities. The new rate granted the Lone Star Gas Company is 75 cents a thousand for domestic and 45 cents for industrial purposes.

This hike by the Lone Star Company, who makes the price in this territory, is expected to cause operators to exercise more care in conserving their gas.

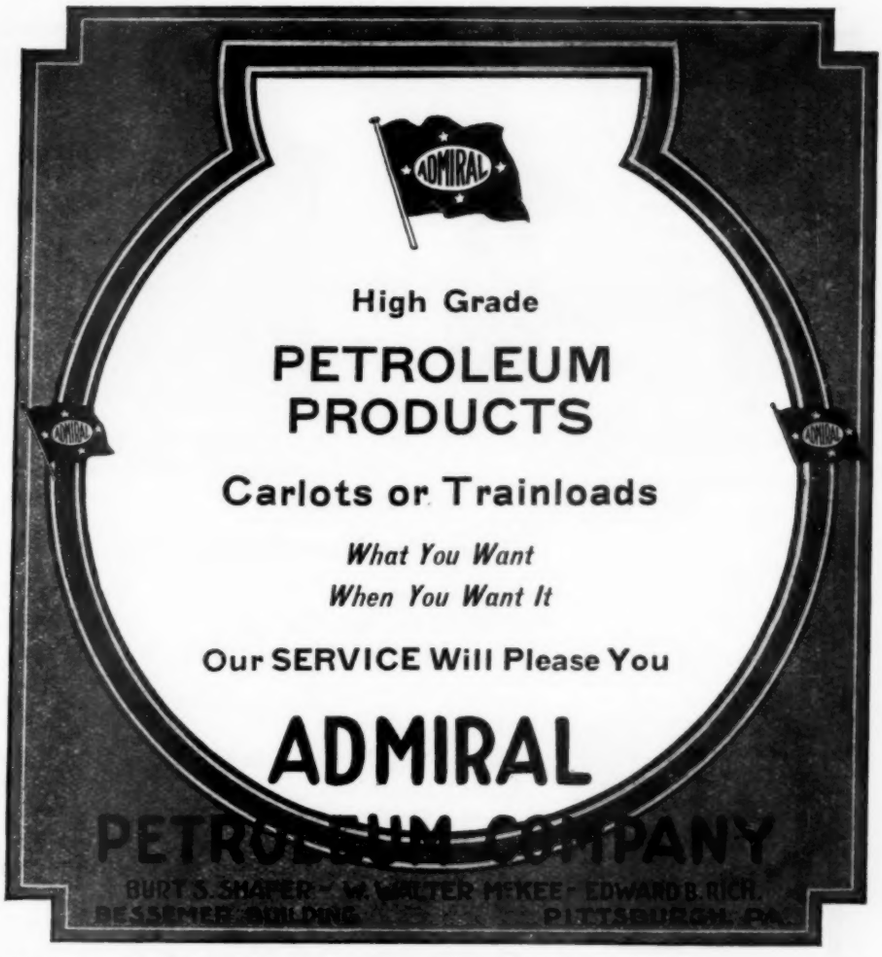
LEXINGTON, KY., Oct. 18.—Runs from the oil districts of eastern Kentucky for the week ending October 9, just reported by the Cumberland Pipe Line Company, totaled 66,396.75 barrels, which is a falling off of several thousand barrels over the output of the previous week. The Big Sinking district of Lee county still holds the premier place, the output from this district aggregating approximately 20,000 barrels. Hell Creek, Lee county, and Oil Springs, Magoffin county, both new districts, also make good showings, as will be seen by reference to the report.

Following are the runs by districts:

District		Runs
1	Busseyville	934.98
1A	Fallsburg	813.96
2	Cooper	760.65
3	Denny	277.15
5	Stubenville	1,006.49
6	Cannel City	228.42
7	Fitchburg	4,097.39
8	Ravenna	6,092.45
8A	Ravenna	4,551.02
9	Hazel Green	270.70
9	Stillwater	107.67
10	Wagersville	754.58
11	Potter	726.54
13	Parmleyville	914.25
14	Pilot	6,375.70
15	Pilot	3,721.93
16	Zachariah	3,855.34
16B	Big Sinking	10,436.99
17	Ross Creek	1,193.96
18	Big Sinking	6,602.33
18B	Big Sinking	1,047.69
20	Hell Creek	3,683.52
21	Beaver Creek	75.48
22	Blaine	3,698.86
23	Menifee	1,847.28
25	Oil Springs	2,322.42
	Total	66,396.75

Staff Special

TULSA, OKLA., Oct. 15.—J. Oliver deputy oil and gas inspector of the United States Indian Department in the Tulsa district, has been transferred in a similar capacity, to the fields of southwestern Oklahoma. Mr. Oliver succeeds Mr. Whittaker, who recently resigned to take charge of the land department of the Westheimer & Daube interests, who have large holdings in the Hewitt and other southwestern Oklahoma fields.



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is now operating a barreling plant in St. Louis and is handling all grades of Oklahoma cylinder stocks and tractor oils.

Brown is shipping also in tank cars, for those who want larger quantities.

Wire Brown for prices on naptha —All grades for blending and paint purposes, either on contract or for spot shipment.

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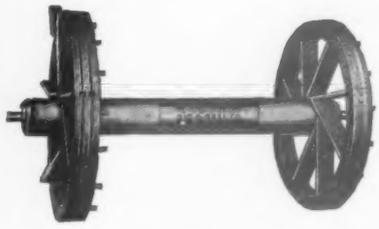

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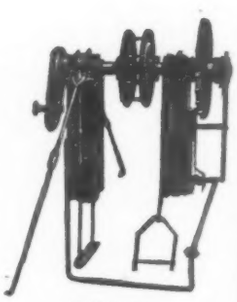
- Portable Bolted-Steel Tanks for Crude and Hot Oil and Gasoline Storage.
- Wooden and Iron Sand Reels
- Steel Crown Blocks.
- Wooden Tanks for Oil and Water.



Rig Irons Common and California Pattern

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Kansas: Eldorado, Peabody, Augusta.

Louisiana: Shreveport, Homer, Gahagan, Minden.

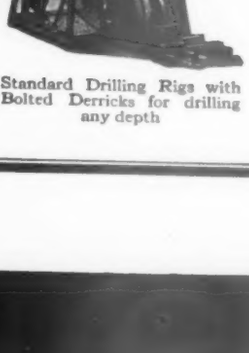
Oklahoma: Drumright, Hominy, Okmulgee, Walter, Pawhuska, Beggs, Blackwell, Wilson, Bristow.

Wyoming: Casper, Osage.

Ohio: Cleveland.

West Virginia: Clarksburg.

Ask for Prices and Descriptive Literature



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Southwestern Bureau
303 Lumberman's Bank Building
Houston
Paul Wagner, Manager

Mexican Well Features Development

BESIDES the encouraging showings of oil in isolated tests in southwestern Oklahoma, a considerable distance from the Comanche county wildcat well of the Gladys Belle Oil Company, the completion of a well slightly extending the Homer pool in north Louisiana and the completion of a 600-barrel Maxon sand well in Gilmer county, West Virginia, in proven territory, but considerably above the average in size, activities in the producing divisions of the United States were of routine character. The feature in the week's run of oil news, however, came from Mexico where a large caliber well has been drilled in by the Doheny interests in the Zacamixtle district.

Expect Pool in Southwest Oklahoma

Southwestern Oklahoma, which offers the largest virgin territory to the operators' drill of any area in the state, with the exception of the Osage reservation, has several tests, in the neighborhood of the Lawton wildcat recently brought in, which are showing most promisingly, and it is not improbable that a real pool will be opened up in this district before winter weather sets in.

With but a short time before cold weather can be expected to materially handicap operations, Kansas operators are driving development in the Covert-Sellers and Urschell areas, Marion county, to the limit and should develop a large flush production which will more than offset the decline of older fields.

The prize completion of the week in north Louisiana, marking an extension of about 600 feet to the lower Homer pool, or the deep pay division of this pool. It started off with a flow estimated at 7,000 barrels daily.

Breckenridge May Exceed Pipe Line Capacity

In the Breckenridge, Texas, area of the black lime territory, intensive development on and adjacent to the townsite is responsible for the swell toward a crest which, if uncurbed, promises within the next 40 days a serious local congestion. Pipe line carriers are practically full of oil and no considerable storage room exists, the failure of the Ranger pool and Desdemona to meet expectations having caused an abandonment of parts of the program for building pipe lines.

Maxon Sand Well Leads Eastern Completions

Completions in eastern fields were led by a 600-barrel Maxon sand well on Little Laurel Run, Tanner's Creek, Gilmer county, W. Va. The well was drilled by the South Penn Oil Company, which has led in the development of the Maxon sand. Another well in the same district made 125 barrels initially. In southeastern Ohio a Clinton sand producer was good for 190 barrels and the week's work was marked by the completion of a number of gassers in West Virginia fields.

Zacamixtle Find of Big Significance

Operators familiar with Mexican development rate the finding of oil in the Zacamixtle district, southwest of Los Naranjos production in the district of Cerro Azul, as the most important operation in months and perhaps in years. The well drilled in here by the Huasteca Petroleum Company (E. L. Doheny interests) came in October 8, and the Tampico correspondent of **National Petroleum News** reports that oil shot 60 feet over the top of the derrick. No estimate has been made as to the size of the well, but the discovery justifies the investment in this district of millions of dollars in pipe lines, railroads and leases made long before oil was found.

Late Field News

TULSA, Oct. 18.—The Carter Oil Company and Ward's No .9 Sellers in the southwest corner of the northeast quarter of Sec. 28-21-4, Covert-Sellers field, Marion county, Kansas, is making 250 barrels from regular depth. It is on the extreme southeastern edge of the field, and is a slightly larger well than has characterized this portion of the field.

The first failure on the western part of the Covert-Sellers field is the Gypsy Oil Company and Phillips Petroleum Company No. 4 Hildreth in the north half of the southeast of Sec. 20-21-4. The hole is standing full of water at 2,467 feet and casing is being pulled. This is the fourth dry hole in this field which now has 55 producing wells.

Doctor Wilhoit, who drilled the Doctors Hope well in the Covert-Sellers pool some time ago, has a wildcat in Sec. 9-9 north 10 east in Hughes county, showing for ten barrels of oil and considerable gas with sand found at 760 feet. Preparations are being made to drill in. The Lucky Tiger Oil Company No. 8 in Sec. 35-15-14, which is the first Wilcox sand well in the entire Bald Hill country, has been drilled deeper to 7 feet in sand found at 2,135 feet, and increased the production to 350 barrels.

Two Killed, 75 Hurt When Oil Tank Burns

By Special Correspondent

TAMPICO, MEXICO, Oct. 16. — As a result of the fire last week at the Aguila Company's tank farm in which a 55,000-barrel tank was destroyed, two men were burned to death and 75 seriously injured. This was the second bad fire that the company has had within a month, the first one having destroyed five 55,000-barrel tanks and 2,000,000 barrels of asphalt.

Mexican Gulf Gets New Well On Zuniga

By Special Correspondent

TAMPICO, MEXICO, Oct. 16. — Zuniga No. 4, Buena Vista lease, Panuco, of the Mexican Gulf Oil Company, was drilled in October 2, at a depth of 1980 feet in shale. The well will flow about 1,500 barrels.

Texas Fields Quiet During Week; Records Of Palo Pinto County Wells

Staff Special

HOUSTON, Oct. 16.—New operations in the several fields of Texas were quieter over the trade week than in any similar period for months, the highlights being confined entirely to the West Columbia and Hull pools of Gulf Coastal classification. In the black lime territory of the Central Mineral Belt, there were no completions that marked any change in the trend of development nor was there any development worthy of more than passing notice. The same was true of the Wichita Falls sand country, which on its present fairly settled basis is to be regarded as one of the most important producing areas in the state, but which is quiet from the development viewpoint.

In Young county, immediately north of the Stephens county black lime district, the sand development around the North American Oil & Refining Company-Roxana Petroleum Company partnership wells continues to be watched for its local importance. The latest completion in this section is the Graham Oil Syndicate's No. 1 M. K. Graham, pumping 60 barrels at 2,112-2,120 feet. The Sun Company's deep Stein test to the black lime horizon, in this territory, showed for two barrels at 3,626 feet.

Since cleaning out after a shot the North American-Roxana partnership No. 1 Boozer will make 50 barrels; tubing and packer has been set in No. 1 Payne and the well is making 75 barrels; No. 2 Goode is making 60 barrels after setting tubing and packer; C. F. Colcord's No. 2 J. J. Scott is setting tubing to pump.

There had been no further developments at West Columbia, as this was written, than had been reported in telegraphic advices appearing in the October 13 issue regarding this Gulf Coastal salt dome pool. At Hull the Gulf Production Company's No. 18 Phoenix, which came in last week rated as high as 3,000 barrels, was credited with being an 1,800-barrel well, making 21.4 gravity oil at 2,575 feet. The J. W. Link Corporation completed its Riverside sub-division test at Humble at 3,057 feet, pumping 100 barrels.

An accompanying tabulation shows the record of producing wells in Palo Pinto county, which lies immediately to the east of Stephens county and to the northeast of Eastland county, in the Central Mineral Belt. The table does not show all the gas wells drilled in Palo Pinto, nor does it show any of the shallow Strawn oil wells other than those now producing marketed oil. Two years ago the Strawn shallow pool, in the southwest corner of the county, was making about 500 barrels of oil daily from a few more than 100 wells. The accompanying record, as of September 1, takes into account the wells then producing, the production column, however, accounting only for the initial maximum output of the wells in the case of the Texas Pacific Coal & Oil Company, the principal operator there. Between it and the Strawn Petroleum Syndicate, the latter, with 534 barrels daily production September 1, the Strawn pool was good for only about 1,200 barrels daily, total oil production:

Palo Pinto County Well Records

Company — Well-Number	Date Comp.	Pay	Total Depth	Initial Prod.	Sept. 1, 1920, Prod.
Consumers Gas & Fuel Co.					
D. A. Hess 1	12-19	1010	1025	8m gas	.....
D. A. Hess 3	1-20	1000-1010	1100	4½m gas	.....
D. A. Hess 4	2-20	1000-1024	1024	4m gas	.....
J. E. Hess 2	11-19	1033-1045	1220	1m gas	.....
Oakes 5	11-19	1065-1075	1075	1m gas	.....
Parmenta 2	1-20	1155-1165	1165	3-4m gas	.....
Empire Gas & Fuel Co.					
M. M. Gill 1	2-20	980- 990	....	1m gas	.....
S. Taylor 3	3-20	1073-1075	....	4m gas	.....
S. Taylor 4	4-20	1034-1054	1054	8m gas	.....
Lone Star Gas Company					
Cook 1	1-20	1004-1018	1018	1m gas	.....
Forbis 1	12-19	1165-1172	1172	1½m gas	.....
J. B. Herrington 1	11-19	.....	2560	.....	.....
J. B. Herrington 2	6-20	985-1007	1007	2m gas	.....
J. B. Herrington 5	11-19	991-1013	1013	2m gas	.....
J. D. Oakes 6	11-19	1032-1075	1075	3½m gas	.....
Keown 1	11-19	976- 999	1000	2m gas	.....
Keown 2	11-19	992-1010	1010	1m gas	.....
Keown 3	11-19	1008-1025	1025	2m gas	.....
Keown 4	2-20	992-1005	1005	2m gas	.....
Keown 6	3-20	989-1014	....	1½m gas	.....
Keown 7	4-20	975- 985	985	2m gas	.....
Keown 8	5-20	987-1008	1008	2m gas	.....
Keown 9	5-20	991-1027	1027	2m gas	.....
Keown 10	5-20	990-1005	1005	2m gas	.....
Keown 11	6-20	975-1001	1001	2m gas	.....
Keown 13	8-20	984-1015	1015	¾m gas	.....
Withers 1	3-20	984-1000	1000	2m gas	.....
Withers 3	6-20	985- 998	....	2m gas	.....
Withers 4	7-20	986-1004	....	2m gas	.....
Withers 5	7-20	987-1003	....	2m gas	.....
Pierce Oil Corporation					
Ackerman 1	4-20	3410-3412	....	12m gas	.....
Sinclair Oil & Gas Co.					
Holt 2	4-20	3086-3117	3220	30 bbls.	12 bbls.
D. A. Upham Co.					
H. Balding 2	7-20	3664-3779	3779	25 bbls.	.....
J. E. Whitesides et al.					
Lane 1	4-20	.....	3737	10 bbls.	.....
Strawn Petroleum Syndicate					
Stewart 1	1-20	1730-1736	1736	240 bbls.	.....
Stewart 2	2-20	1720-1726	1726	300 "	.....
Stewart 3	5-20	1650-1665	1800	75 "	.....
Stewart 4	4-20	1670-1680	1680	1500 "	.....
Stewart 5	4-20	1718-1726	1726	500 "	.....
Stewart 6	5-20	1812-1826	1836	120 "	.....
Stewart 7	6-20	1814-1840	1840	500 "	.....
Stewart 8	7-20	1680-1695	1717	450 "	534 "
Texas Pacific Coal & Oil Co.					
Stuard 12	11-19	1690-1701	....	425 "	.....
Stuard 15	11-19	1468-1476	1476	2m gas	.....
Stuard 17	12-19	1722-1728	1728	100 bbls.	.....
Stuard 18	1-20	1615-1622	1622	8m gas	.....
Stuard 19	3-20	1654-1660	1660	100 bbls.	.....
Stuard 20	3-20	1640-1681	1681	600 "	.....
Stuard 21	4-20	1496-1516	1516	25 "	.....
Stuard 22	3-20	1670-1672	1672	410 "	.....
Stuard 23	2-20	1643-1649	1649	1300 "	.....
Stuard 24	2-20	1654-1660	1660	125 "	.....
Stuard 26	7-20	1544-1564	2057	.....	.....
Stuard 110	7-20	1693-1700	....	10 "	.....
Stuard 114	7-20	1659-1714	1715	200 "	.....
Stuard 122	7-20	1597-1618	1618	20 "	No record

Shallower Panuco Pay Is Considered

Staff Special

HOUSTON, Oct. 16.—Possibilities of another producing level considered by some operators to exist in the Panuco field of Mexico are claiming some attention since the recent completion of the Mexican Gulf Oil Company's No. 4 Zuniga, in the Buena Vista section, of the heavy oil district and the completion of the Texas Company of Mexico's No. 2 Torres, in the Isleta section as a shallow salt water failure.

The Gulf well, good for some 1,500 barrels, initial production, came in at 1,980 feet as against producing levels for the other three wells on the same lease at depths varying from 2,250 to 2,370 feet. The Texas Company of Mexico, S. A., well was completed at 2,014 feet.

Operators conversant with the Panuco field thru their own operations therein make the point that they believe a higher producing level exists than that from which the Panuco oil is ordinarily taken, advancing the statement that this upper horizon has been ordinarily passed up in going after the larger production below.

Development for oil from the upper level alone is not considered a profitable enterprise under conditions existing in Mexico, but in the case of the Mexican Gulf's Zuniga lease, which long ago has paid for itself, and which at present shows nominal production in comparison with the larger volume the wells were at first good for, the 1,500-barrel No. 4 takes on a different aspect. It is under such conditions as this that the possibilities of an upper level carrying both oil and water are being studied. The three other wells of the Mexican Gulf on the Zuniga lease, rated as late as last July as being good for nearly 15,000 barrels combined production daily, is making less than 1,000 barrels exclusive of production from the newer No. 4 well.

Two Tests In Southwestern Oklahoma Showing For Producers

Staff Special
TULSA, Oct. 16

CONTINUED ideal weather conditions, coupled with the momentum gathered in the summer campaign, is enabling Oklahoma crude oil production to maintain a daily average of slightly over 300,000 barrels. While this production cannot be attributed to any particular area, the bulk is coming from the great increase of Hewitt field, Carter county, which is producing roughly 32,000 barrels daily; the Osage reservation, with its sixty odd thousand barrels of production; and Okmulgee county, with an output of approximately 55,000 barrels. Tho there is hardly a week passes in this state without two or three new pools being discovered, they are, on the whole, shortlived, offsetting the depletion of previously discovered territory of limited area.

Estimated daily production of Oklahoma for the past week is as follows: Cushing, 34,000 barrels; Hewitt, 32,000 barrels; Healdton, 26,400 barrels; other fields, 212,000 barrels; total, 304,400 barrels.

Despite water encroachment and other obstacles, Kansas operators apparently will be able to maintain a production figure of, roughly 95,000 barrels. They see in the Urschell and Covert-Sellers fields the possibilities of large flush production during the coming winter months, tho the real value of these fields is problematical in the light of other fields' experience with water trouble, as the efforts to combat this menace have shown indifferent results in the past.

Daily production of Kansas for the past week averaged 94,640 barrels, divided among the following fields: El Dorado, Peabody, Elbing, Florence, 65,100 barrels; Augusta, 10,140 barrels; other fields, 19,400 barrels.

High Spots in Oklahoma

With the older fields in Oklahoma showing but an ordinary run of completions, the important developments of the week were the showing of oil in two tests in southwestern Oklahoma, some distance from the wildcat recently brought in east of Lawton —the eleventh hour completion of a 4,000,-barrel Mississippi lime producer in the western part of the Osage reservation during the Osage sale; a new pool in the Henrietta district; a Glen sand pool near Kelleyville, Creek county; and the completion of the largest gas well ever drilled in the Fox district.

Southwestern Oklahoma

Operations in this territory, particularly in the new pool opened up by the Gladys Belle Oil Company's wildcat, 12 miles east of Lawton, are progressing slowly but the next few weeks are expected to prove the possibilities of this area, as a mile and a quarter east and the same distance north of the discovery well, the Merriman test in the center of the northwest quarter of Sec. 28-2N-9W, found the top of the sand at 1,552 feet and has a nice showing of oil. Drilling in of this well and the Daw Bell Oil Company's wildcat, one-half mile south of the Gladys Belle well, which is shut down at 1,505 feet, should give operators a good line on the potentialities of this district, tho the present showing of the discovery well is not such as to make oil men particularly enthusiastic. It has pumped 30 barrels a day for a couple of weeks, but the production has declined to the point where the Gladys Belle is running tools. It has about five feet of cavings in the hole.

In Garvin county the Magnolia Petroleum Company's test in Sec. 9-1N-3W, a mile north and a half mile west of the large gas wells recently completed by the Magnolia Petroleum Company, and Wrightsman and others, in Sec. 16-1N-3W, is a failure, as it missed the 1,300-foot horizon found in the other wells, and was drilled in to salt water. This test evidently defines the northern limit of the structure and will cause operators to test out the possibilities of the west, east and south extensions. The Wrightsman Oil Company is investigating the commercial possibilities of a line from this field to Pauls Valley and Wynnewood, Oklahoma, and may lay a line into these towns, provided franchises can be obtained.

In the Fox district the Humble Oil & Refining Company and the Fox Petroleum Company have what is estimated as a 70,000,000-foot gas well in the northwest quarter of Sec. 34-2S-3W, which blew itself in at a depth of 2,205 feet. The tools were in the hole when the great pressure broke the cap rock above the sand and blew them several hundred feet above the derrick. It is believed to be the largest gasser ever completed in this district. In the same section and district, the Empire Gas & Fuel Company well, on the Davis farm, which was completed on June 10th, has been tested and shows 40,000,000 feet of gas with a rock pressure of 700 pounds. It was estimated at 75,000,000 feet when drilled in, but the Empire Company was unable to handle it and it ran wild for quite a while. It is now connected up with the Lone Star Gas Company and the Consumers Light & Power Company's line.

Pipe line runs of the Hewitt field of Carter county for September, just now available, show an average daily production from this field of 31,908 barrels. Of this amount, the Prairie Pipe Line Company is handling ,roughly, 60 per cent, or 19,641 barrels. Other pipe line runs were: Texas Company, 10,130 barrels; Pierce Fordyce Pipe Line Company, 472 barrels; Empire Pipe Line Company, 430 barrels; Chickasaw Refining Company, 1,185 barrels.

A survey of production from this field reveals that eight companies or interests are producing 24,579 barrels out of a total daily production of 31,908 barrels. The Carter Oil Company, with 6,099 barrels, leads all Hewitt producers, with the Wolverine Oil Company (Union Oil of Delaware) second, with slightly over 5,000 barrels, and Westheimer et al, third. The larger producers in this field and number of barrels of daily production for the month of September are as follows:

Carter Oil Company	6,099 barrels
Wolverine Oil Company	5,101 barrels
Westheimer et al	4,636 barrels
Humble Oil & Refining Company	2,538 barrels
Humble Oil & Refining Company & Simpson	791 barrels
Skelley Oil Company	2,388 barrels
Texas Company	2,065 barrels
Simpson and others	961 barrels
	31,908 barrels

According to the Prairie pipe line runs of the first ten days of the current month, crude oil production for October from the Hewitt field will break all records, as the Prairie is handling more than 20,600 barrels daily.

Henryetta

Three-quarters of a mile in advance of the 1,100-foot production in this district, the Transcontinental Oil Company's No. 1 in the southeast corner of Sec. 14-12-12, found the top of the sand at 2,251 feet and at one foot in, is making 200 barrels flowing by hour heads. While there are several dry holes near this well, none have been drilled to the 2,250-foot horizon and the completion of the Transcontinental well is expected to cause a redrilling campaign on nearby leases.

Creek County

The National Exploration Company, Mid-Continent subsidiary of the Union Oil, of Delaware, which is expected shortly to take its place among the largest producing companies in the Mid-Continent field, having bought a large amount of acreage in various parts of Oklahoma in the past several months being the heaviest purchaser of Osage acreage at the sale of October 12th, has opened up the first pool to its credit since its entrance into the Mid-Continent field, by the completion of its test in the northwest corner of the southwest of the northwest of Sec. 21-17-10 west of Kelleyville, Creek county. It is producing from glen sand and is rated as a 50-barrel well as it stands, but will be given a shot.

In what is termed, locally, the Slick field, the past week has shown but an average

number of inside completions, the largest two producers being the Savoy Oil Company's No. 3 on the Smith farm in the southeast corner of the northeast of Sec. 25-15-10, which found sand from 3,037-57 feet and is making 200 barrels after a 20-quart shot, and Alexander Dingwall's No. 3 Jacobs farm, in the northwest corner of the southeast of Sec. 9-15-10, is a 125-barrel well in sand from 2,652-97 feet after a shot of 40 quarts.

Osage Reservation

At the afternoon session of the Osage sale, held at Pawhuska on Tuesday, October 12th, Colonel Walters announced that the Gypsy Oil Company has just brought in a well in the northeast corner of Sec. 35-23-7, making 170 barrels an hour. Colonel Walters explained that the tract this well was located on was a diagonal offset to tract No. 6, on the west side, which was to be offered for sale at the evening session. Completion of the well at this opportune time (from the Osage standpoint) caused the Gilliland Oil Company and Gypsy Oil Company, who had pioneered and developed this territory, to pay $271,000 for tract No. 6. Considering that the Gypsy well is producing from the second break in the Mississippi lime, whose treacherous characteristics are well known, it is believed by many Mid-Continent operators that the price paid for the 160-acre offset represents a decided gamble.

Other large wells completed in the reservation during the past week were: Indian Territory Illuminating Oil Company's No. 10 in the center of the west line of the southeast of the northwest of the northeast of Sec. 36-23-10 which found sand from 1,749-87 feet and is making 750 barrels after a 230-quart shot; Fifty-Nine Osage Oil Company's No. 27 in the northwest corner of the southwest of the northwest of the northeast of Sec. 9-23-12, found sand from 1,562-1,690 feet and started off at an 820-barrel rate. It is now doing 100 barrels.

Noble County

The Prairie Oil & Gas Company's wildcat in the southeast corner of Sec. 17-22-2W, near Perry, which has created more excitement than any development in recent months, is held up awaiting pipe line connections. As it stands it is making 15 barrels of oil and some salt water at a total depth of 2,079 feet. It is expected to be drilled in within the next day or so. This test is located about equidistant from the Garber and Billings field.

Okmulgee District

Seven miles west of Beggs, the H. F. Wilcox Oil & Gas Company's No. 4 Willie Stephney farm, in the northwest corner of the southwest of the southwest of Sec. 24-15-10, is making 2,000 barrels five feet in the Wilcox sand found at 2,980 feet. It made 2,400 barrels the first 24 hours. In Sec. 11-14-11 the Riverland Oil Company's No. 5 Blunt, is making 10,000,000 feet of gas from the Glen sand found from 1,895-1,995 feet. It will not be deepened as the gas is needed for fuel.

There is a noticeable let-up in new work in the Beggs district as the various pools that characterize this territory are being clearly defined.

Kansas

With additional pipe line facilities practically completed into the Covert-Sellers and Urschell pools in Marion county, operators are centering their development on this territory to obtain their part of the large flush production wells in these fields are evidencing. The Ramsey Petroleum Company, which recently purchased the Doyle lease, in the north half of the northwest quarter of Sec. 20-21-5, Urschell pool, has six rigs up offsetting the Jeffreys' lease of the Prairie Oil & Gas Company. The No. 1 on the Jeffreys, which is located in the extreme southwest corner of the southwest quarter of Sec. 17-21-5, is still making 1,000 barrels and it is understood that the Prairie will immediately drill eight other wells as a protective measure. The wonderful stamina displayed by the Natitonal Refining Company and Merriam & Feindeiss' No. 1 Urschell, the discovery well of the pool, indicates that this territory has the greater potentialities than any other known area of like size in Kansas.

In the Covert-Sellers pool Bird & Titus No. 7 in the west half of the northwest quarter of Sec. 21-21-4 found the top of the sand at 2,430 feet and at six feet in is swabbing 200 barrels. This well is a diagonal offset of the Ramsey Petroleum Company's Miller No. 3, which was credited with being the largest producer ever completed in the field, being estimated at 3,000 barrels initial. In the southern part of the field, Ward & Wilhoit have completed their No. 10 on the Mary Covert farm in the east half of the northwest of Sec. 28-21-4. It is estimated as being good for 200 barrels.

In eastern Butler county, the Tidal Oil Company's No. 2 Dickinson, in the northwest quarter of Sec. 16-26-8, is making 200 barrels after an 80-quart shot. It was first shot with 20 quarts and made 210 barrels the first day and 400 barrels the third.

A half mile south of the Teter pool in Greenwood county the Emerald Oil Company's test on the Landergin in the northwest quarter of the southeast quarter of Sec. 28-23-9 has a showing of oil and is running the big pipe preparatory to drilling in. No estimate is made of the capacity of the well, but it is believed to be a commercial producer.

Latest advice from the Argos Oil Compan's wildcat on the Bott farm in Sec. 9-19-4, north of Marion, is that this test which was expected to make a producer, has 1,800 feet of fluid in the hole, mostly water and probably will be abandoned. Regardless of the outcome, however, the early showing will undoubtedly cause a further testing out of this territory.

Two Peralta Wells Of Standard Affected By Panuco Salt Water

Staff Special

HOUSTON, Oct. 15.—Here is a record of Standard Oil Company of New Jersey production, operating thru its subsidiary, Transcontinental Petroleum Company, on the Peralta property in the Panuco heavy oil field of Mexico. All the Transcontinental wells with the exception of Nos. 2 and 4, taken over from the Vera Cruz-Mexican Oil Syndicate, were producing clean oil as of October 1, the date of the accompanying report:

Co-Ordinate		Well-Number	Total Depth	Prod.	Remarks
(Purchased from International Petroleum Co.)					
24	7-D	Peralta 1.....	2080	1743	Average production.
43	7-D	Peralta 2.....	2034	50	Abandoned after show.
59	7-D	Peralta 3.....	....	....	Not producing, dry.
(Transcontinental Petroleum Co. original operation.)					
19	7-D	Peralta 1.....	2089	3011	Average production October 1; was 8,000 barrels July 1.
61	7-D	Peralta 2.....	....	....	Not Producing, abandoned.
(Purchased from Vera Cruz-Mexican Oil Syndicate.)					
3	7-D	Peralta 1.....	2132	500	Average production.
9	7-D	Peralta 2.....	2050	53	Flowing this average closed in; showed 1 per cent s. w., September 17, 1920.
16	7-D	Peralta 3.....	2091	550	Average production.
20	7-D	Peralta 4.....	2208	Shut-in	Showed 90 per cent S. w., September 19, 1920, while producing 1,600 barrels average.
37	7-D	Peralta 5.....	1906	2073	Average production.

Other Panuco production of subsidiaries of the Standard of New Jersey is on the Barbarena lease, the record of which is not given herewith.

Institute To Consider Federal Taxation Plan

NEW YORK, Oct. 18.—The Second National Industrial Tax Conference is scheduled for a meeting in the Hotel Astor on October 22 and 23. The purpose of the meeting is to consider a number of recommendations relating to proposed federal tax program.

In order that the oil industry may have time fully to consider the proposition and send its delegates to the industrial tax conference fully advised, forearmed and instructed, the American Petroleum Institute has called a caucus to be held in its office in New York on October 20 and 21, the two days immediately preceding the two days of the conference.

At the meeting in the office of the institute the whole matter of federal tax legislation will be discussed in order that the delegates to be appointed by the institute to represent it at the conference may profit by the views of the industry as a whole. Representatives from various industrial organizations have constituted the National Industrial Tax Conference and the oil industry has been represented in its deliberations.

Working upon the contention that the government's needs are $5,000,000,000 a number of proposals have been advanced as ways of raising the money. Altho they are numerous they all fall into three main groups, according to classifications made by the institute. They are as follows:

1—A tax on every sale or turn-over not only of commodities, but also of service, real property, capital assets, rents and interests.

2—A tax on every sale or turn-over of goods, wares and merchandise (limited to commodities).

3.—A tax on all sales of goods, wares and merchandise for final consumption or use.

New Zacamixtle Well Seventh High Point In 40-Mile Line Of Production

By Paul Wagner
Editorial Manager, Southwestern Bureau

Staff Special
HOUSTON, Oct. 15

THE finding of oil by the Huasteca Petroleum Company (E. L. Doheny interests) in the Zacamixtle district, southwest of Los Naranjos production in the direction of Cerro Azul, is regarded by oil operators familiar with development in Mexico as the most important operation in months, if not years.

Huasteca Petroleum Company brought in its No. 1 test, lot 24, at 10:45 o'clock, the morning of October 8, and the Tampico correspondent of **National Petroleum News** reports that oil shot 60 feet over the top of the derrick before the well was closed in. According to later reports, the well was bridged at 2,427 feet, but Huasteca officials were quoted as stating their belief they had completed a large well.

"Regardless of the size of the well," writes the Tampico correspondent of **National Petroleum News,** "the fact that oil has been found in the Zecamixtle district is considered one of the most important things that has happened in the oil industry in years. Millions of dollars have been invested in this district in pipe lines, railroads, leases and refineries long before oil was found. The Huasteca well proves that the faith of the oil men and geologists was well founded and that another big district has been added to the productive ones of the oil fields of Mexico."

Zacamixtle lies southwest (nearly south) of the Los Naranjos territory, of which latter the Chinampa and Amatlan production may be properly termed a part. Beyond Zacamixtle is the Cerro Azul production of the Huasteca Company, where one well, No. 4, was completed in 1916, rated good for 260,000 barrels daily but never allowed to flow more oil than could be moved out thru two 8-inch pipe lines.

Cerro Azul is about midway between the northern and southern extremities of the known extent of a 40-mile long fold, extending from a point immediately north of the Tepetate pool due southward to the Alamo well of the Penn-Mex Fuel Company, which drilled several surrounding tests but completed only one producing well. This well, which was affected by salt water, produced several years and was an important individual development to its owners. Other tests are now being made in an attempt to get additional oil out of the Alamo territory.

High Points of Production

Seven points of operating interest, now that Zacamixtle may be considered a producing area, stretch from the Alamo well on the south along the 40-mile "knife-edge" fold north to Tepetate, the latter lying immediately beyond the Juan Casiano development, these two points on the north having been hit by salt water encroachment which also affected Potrero del Llano, the latter being situated between Alamo and Cerro Azul.

From Alamo to Petrero del Llano accounts for about 15 miles at the south end of the known fold, where salt water encroachment is creeping northward toward the center of the 40-mile stretch; thru Tepetate aad Casiano is accounted for nearly 10 miles where salt water has brought production to a minimum; in that part of Los Naranjos, where Chinampa has been the most important recent development, the farthest northeast well of the pool, owned by the Transcontinental Petroleum Company, showed about 1 per cent salt water some six or eight weeks ago and was pinched down from its maximum of 20,000 or 30,000 barrels daily, also the first well of the Mexico operating subsidiary of the Island Oil & Transport Company on the lot where its No. 2 well is producing regularly was completed as a salt water failure, altho it never made oil.

Viewed from the general operating standpoint, regardless of the fact that some slight production is coming from some of the wells, the Alamo production, that of Potrero del Llano, Tepetate and Juan Casiano is gone, the victim of salt water. There remains, so far not seriously encroached upon, all of Los Naranjos-Chinampa, the Cerro Azul property and the currently reported Zacamixtle development to result from the Huasteca's "discovery."

Production Two Miles Across

As this 40-mile fold is traced from north to south, it is significant that the productive area has been found to be no more than two miles across. It is true that the fold itself can be detected further out, but the oil does not extend beyond a distance of two miles. The oil is not found in continuous development, either, "saddles" occurring in the structure. In between these "saddles," a series of high points along the line mark the known pools as named.

Altho, as the situation rests to date, all the oil so far found in the southern light (20 gravity) districts has been along this single line of high points, there has been little testing outside. Nevertheless, there were drilled a number of tests regarded as promising, which were off these high points and which failed.

With salt water creeping towards the center from both ends of the fold and with the recognized situation that sooner or later the present productive areas must go the way of their predecessors, the finding of Zacamixtle production is doubly important. It adds to approximately 750,000 barrels, maximum potential daily production, from wells in the Chinampa part of the Los Naranjos territory since the first of the present year, altho, of course (as frequently pointed out in **National Petroleum News**), maximum potential production does not represent the daily recovery possible for the reason that it is always necessary to guard against possible salt water, and when it appears the wells are from time to time pinched down to the point where they will produce clear oil, or as nearly so as possible.

While there is a small amount of gas found in the lower country areas (as against none in the heavy oil fields of Panuco and Topila, southwest of Tampico), it may be said that actually the oil rides on the salt water in the fields along the east coast of Mexico and that when the water comes the oil is gone. The oil comes from openings or cavities at the upper surface of the Tamasopo limestone and is underlaid by this salt water. Overlying the oil is found the San Felipe beds, consisting of lime shells.

There is enough porosity for the free movement of oil and water into the sands after tapping the reservoirs, and this fact makes possible the recovery of at least some oil that would not be otherwise obtained after salt water appeared, were the sands less porous.

How Salt Water Encroaches

An illustration of the encroachment of salt water that must necessarily follow the flowing of the big wells in Mexico to anything like their maximum may be found in the application of the principle involved in taking water into a pump-gun. In the case of the oil it comes into the well from the sides, but below the bottom of the hole, what may be described as a water "cone" begins forming, the rapidity of its formation and its size depending upon the distance between the casing-seat of the well and the level of the water-table below the oil. Such a water-cone, if permitted to form, might become large enough to trap off oil that would be otherwise produced, in which case the usual method of remedying the situation would be in such cases as is possible to pump back oil into the hole and force it thru the water to a connection with the oil remaining underground, forming outlets for the latter thru such a connection, this being particularly applicable to a situation involving less porous sands than those found at producing levels in Mexico.

With such porous sands existing as those found in the wells of the lower country of Mexico, it has been found, however, that after the appearance of water in a well, the closing down of the well will permit the water settling back, at least somewhat toward the

level of the water table, and upon opening up again, pinched down further than previously, it is possible to continue producing oil.

Such, for instance, is the condition governing many wells in both the light and the heavy oil districts (generally considered to be unrelated territories) and this illustrates the folly of considering as the present potential production of wells in Mexico the maximum at which they were originally rated, even tho they were never permitted to make their open-flow capacity.

Potrero del Llano is an illustration. The one well at one time made from 40,000 to 50,000 barrels of oil, daily, altho its estimated maximum potential production would have exceeded 100,000 barrels. When it was being flowed at 20,000 barrels it began making a little water and was pinched in; now it is making only a few hundred barrels.

Beyond Tepetate, on the north of the lower country "knife edge" fold, the Dos Bocas well was drilled around seepages to the northeast of the line of high points hereinbefore outlined. Altho it produced for a while it afterwards went to salt water, another evidence of a condition where uncontrolled flow invites disaster in the fields of Mexico.

The geology of the lower (south) country shows the shales and sands of the San Fernando beds at the top, these being of Tertiary classification. Underneath are found the Mendez marls and Papagallos shales, of the upper Cretaceous series, about 2,000 feet thick off the folds. Then comes the San Felipe beds (lime shells) for about 500 feet, with the oil underlying and on top of the Tamasopo limestone which is so thick that its extent is unknown. On the folds, however, these series thin down and may be of varying thickness, a fact readily realized when it is remembered that the pay is found in the Chinampa development from 2,000 to 2,200 feet and the Zacamixtle test (on a higher elevation) stands at 2,427 feet.

"Wildcatting" Operations Touched

Altho there have been a few shallow wells at two places south of the Alamo development of the Penn-Mex, these are generally considered to be of separate and distinct character to the principal producing areas of the south country. To the west, in Chicontepec and Otontopec, where it is considered there may be another fold to the west of the present producing line of high points and the crest of the mountains, there has been some leasing up of acreage and plans made for "wildcat" operations.

Tempoal, beyond the mountain range, is another area where thousands of acres have been taken under lease, but it is pointed out by oil operators thorely conversant with conditions both in Mexico and the United States that the chances of "discovering" oil in the interior of Mexico are no brighter than in "wildcatting" elsewhere.

Exports From Mexico 17,311,217 Barrels

Staff Special

HOUSTON, Oct. 15.—Exports of oil from Mexico, which have reached consecutively for the last three months new high records, totaled for September 17,311,217.65 barrels, or more than double the movement in January. Total exports from Tampico, Port Lobos and other east coast loading points for the nine months period ended with September amounted to 86,247,916.68 barrels.

Expectations that the present year would end with exports in excess of 130,000,000 barrels will be realized should the movement for October, November and December be sustained above the 15,000,000-barrel mark, monthly. That this will be done is promised because of the handling of the light oil production in the lower country development, coupled with the completion of the Huasteca Petroleum Company's Zacamixtle well, which opens up a new pool between the Los Naranjos and Cerro Azul areas.

The Tampico correspondent of **National Petroleum News**, in advices to the Houston office, points out that oil exports from Mexico for the month of September not only exceeded all previous records but that August (previously a record month) was exceeded by 1,973,109.27 barrels. The Huasteca Petroleum Company, an E. L. Doheny interest, headed the list of 19 companies with more than two and a half million barrels, and was followed by the Mexican Eagle Oil Company (Aguila) with two and a quarter million barrels. Six other companies shipped more than a million barrels each.

Accompanying will be found detailed figures, by companies, over the period.

Company	January 1920	February 1920	March 1920	April 1920	May 1920	June 1920	July 1920	August 1920	September 1920
Huasteca Pet. Co	1,753,564.15	1,626,588.84	2,035,920.24	3,022,806.21	2,416,806.21	1,180,750.95	2,717,841.35	2,538,077.15	2,695,191.89
Penn.-Mex. Fuel Co	749,084.45	155,218.75	628,088.27	881,006.91	378,354.46	260,410.29	129,389.00	784,921.79	898,154.80
Compania Mexicana De Petrolia "El Aguila"	1,013,314.00	1,458,339.00	1,494,784.00	1,382,959.00	1,900,002.00	1,882,549.00	1,765,056.00	1,405,938.00	2,248,387.00
Texas Company of Mexico, S. A.	700,445.67	667,982.62	803,143.42	647,993.88	837,898.73	954,063.53	1,028,360.47	1,079,683.09	1,058,675.90
Cortez Oil Co	456,286.00	348,792.00	156,079.00	44,239.00	364,129.00	763,345.00	702,254.53	691,262.00	1,344,230.00
Standard Oil Co. of New Jersey	1,013,750.56	837,078.23	1,729,266.00	1,212,732.96	1,089,587.96	811,015.02	953,935.58	2,728,056.25	1,991,866.08
Island Oil & Transport Co	554,537.08	670,074.33	546,906.29	841,177.23	1,038,411.90	1,010,097.89	1,508,323.51	1,392,622.04	1,377,334.74
East Coast Oil Co. (Sou. Pac.)	375,937.27	456,936.03	.....	454,051.11	520,990.85	259,136.47	349,282.96	402,259.81	622,164.97
Freeport Mexican Fuel Oil Co.	375,403.90	570,249.89	930,123.38	722,184.41	595,546.42	683,772.05	625,429.49	784,736.58	783,580.81
Mexican Gulf Oil Company	581,907.37	354,982.47	705,261.77	797,662.00	665,659.45	.....	591,421.77	1,031,463.51	1,492,188.02
Pierce Navigation Company	46,999.00	84,420.00	302,165.00	270,180.00	237,529.00	222,830.00	213,850.00	121,159.00	67,333.74
La Corona Oil Co	66,600.00	110,571.69	286,161.81	272,208.00	270,188.58	71,748.38	176,003.81	527,935.51	473,795.63
National Petroleum Corporation	31,001.72	95,682.50	92,287.99	138,878.43	64,695.32	90,199.79	102,304.32	168,329.43	147,875.63
New England Fuel Oil Co	97,700.41	.....	30,780.35	63,392.00	70,478.00	111,244.68	80,408.26	134,474.18	134,018.69
Inter-Ocean Oil Co	34,331.86	68,395.86	54,853.52	34,343.91	38,000.00	35,882.01	35,701.68	35,779.26	69,088.75
Tal-Vez Oil Co	210,966.17	182,631.62	298,446.36	373,367.53	*371,101.55	32,266.92	12,307.12	12,898.55	176,942.68
National Oil Co	.....	.....	.....	33,129.30	94,224.00	63,652.47	136,117.25	171,342.03	232,966.23
Terminal Union Co	.....	.....	.....	.....	59,774.37	.....	.....	.....	.....
Cias. del Agwi, S. A	.....	.....	.....	.....	186,750.82	322,290.23	914,969.48	1,062,728.85	1,024,757.78
Cochrane & Harper	.....	.....	.....	.....	.....	204,625.96	232,064.13	364,341.33	372,664.51
Totals	8,160,829.59	7,677,942.83	10,794,267.40	10,125,442.35	11,200,124.28	10,576,280.64	12,275,021.21	15,438,008.38	17,311,217.63

*Includes 275,680.91 barrels consigned to Cochrane, Harper & Co.

Wild Well In Mexico Was Serious Threat

Staff Special

HOUSTON, Oct. 16.—The seriousness with which the "wild" well of Cia. de Petroleo de Transcontinental, S. A. (Standard of New Jersey), on lot 135, Chinampa, was viewed in the oil regions of Mexico is shown in details from Tampico, received in Houston at the end of the week, accompanying a statement that the "wild gusher" was being harnessed and was expected to be under complete control by a time approximating that at which this is written. Because of frequent delays of two to three days in advices reaching this country from Mexico, it was not known definitely on this date that the well actually had been fully controlled.

From the time the Transcontinental well broke loose, flowing 60,000 barrels maximum after completion, September 25, its condition was viewed with gravity in the lower country of Mexico, operators fearing that it might prove a repetition of the Dos Bocas situation, where the uncontrolled flow had at least its influence on the salt water encroachment at Tepetate and Juan Casiano.

So great was the fear that failure to control the Transcontinental well (in the most thickly drilled part of the Chinampa-Los Naranjos district) would result in disaster for the entire field, that operations were shut down in all parts of the lower country while the field men employed by most all the companies aided in the work of harnessing the wild well. It will be understood that notwithstanding the threat that it gave to surrounding production its menace was even greater than that—for, should it have proven a repetition of Dos Bocas, the pull of its tremendous suction might have brought in the salt water underlying.

Colombian Oil Possibilities; Companies Operating There

Article 1

THE Republic of Colombia is looked upon by prominent geologists as a promising field for the exploitation of petroleum resources. The world demand for petroleum and its products, the favorable reports of geologists, and the actual commercial production from several wells should prove an incentive to the development of the petroleum resources of Colombia.

American Interest in Foreign Production

The United States has undoubtedly reached the peak of home production of petroleum, and with its present production maintained it will take but 18 or 20 years to exhaust its unmined reserves, estimated by Dr. David White to be 7,000,000,000 barrels. "We must expect," he says, "that unless our tremendous consumption is checked, within five years we will be dependent upon foreign fields to the extent of 150,000,000 to 200,000,000 barrels annually." Statistics gathered by reliable experts place the total oil reserves of the world at some 65,000,000,000 barrels, of which probably more than one-half lies in the Western Hemisphere.

The geographical relation of the United States and Colombia should be an important inducement for American development of Colombia's oil resources. The shipping points of the oil regions of Colombia are from 12 to 24 hours nearer the refineries of our Atlantic seaboard than is Tampico, Mexico. A few comparative distances are as follows:

	Miles
Cartagena to New York	1,833
Tampico to New York	2,035
Galveston to New York	1,893
Cartagena to Colon	266
Tampico to Colon	1,486
Cartagena to San Francisco	3,592
Tampico to San Francisco	4,812

LOCATION OF THE FIELDS

Carribbean Coastal Region

This field extends along the coast from Puerto Colombia southwest to the Sinu river. Numerous gas and oil exudations exist thruout this territory, becoming prominent around Las Volcancitas, at Tabura, and in the neighborhood of Cartagena. Oil is found at shallow depths, the wells being drilled at 400 to 1,000 feet. The great disadvantage in this region is the softness of the sand and mud formations, thru which it is difficult to drill on account of caving. Several companies have conducted extensive operations in this region, but no wells of any commercial importance have been brought in to date. In the opinion of several geologists it would be advisable to drill southeast of this district in the Cauca river territory near the boundary between the Departments of Antioquia and Bolivar.

Santander del Sur—Rio Colorado Region

This is the region of the de Mares concession, owned by the Tropical Oil Company and located on the Colorado river in Santander del Sur, 35 miles east of the Magdalena river and 426 miles from Puerto Colombia. This is considered a favorable territory for extensive operations notwithstanding the rough topography of the country, the distance from tidewater, and the high cost of drilling. The oil in this territory is of a high grade, being around 35 degrees Be. gravity and having a small asphaltum content, usually not over 3 to 5 per cent. It gives a gasoline yield of about 40 per cent. The territory both north and south of the de Mares concession is being thoroly explored and taken up for purposes of petroleum exploitation. Recent surveys and explorations would indicate that this field extends southwest so as to include the territory around Honda and Tolima.

Santander del Norte—Venezuelan Boundary Region

This field is situated in the north of north as far as Rio Sogamoso, a tributary of the Magdalena; east to the high the Province of Santander in the region of the headwaters of the Catatumbo river, and extends to the border of Venezuela. It embraces the so-called Barco concession now owned by an American company. Some remarkable seepages of oil of a paraffin base occur in this region. These show under analysis: Gasoline 24.4 per cent, kerosene 18.4 per cent, fuel oil 22.1 per cent, light machine oil 6.4 per cent, lubricating oil 12.4 per cent, and cylinder stock of 15 per cent. This field is considered an extension of the rich petroleum territory of Venezuela which is being extensively developed at the present time.

Development of The Tropical Oil Company

The Tropical Company controlled by the Benedum - Trees-Treat - Crawford interests, of Pittsburgh, was incorporated in Delaware, June 5, 1916. Recently it merged with the International Petroleum Company, Ltd., a subsidiary of the Standard Oil Company of New Jersey. The plans of the merger call for the organization of a new International Petroleum Company, Ltd., under the laws of Canada, with an authorized issue of 100,000 preferred shares of a par value of $5 and of, 7,118,138 common shares of no par value. It is claimed that the merger will be of advantage to both companies, as the International is a producing, refining, and marketing organization, and the Tropical, a producing company, with no adequate facilities for distribution

The International Petroleum Company, Ltd., was incorporated in Canada in 1914 and acquired control of three British corporations, the London & Pacific Petroleum Company, Ltd., and the Lagunitos Oil Company, Ltd., both producers, and the West Coast Oil Fuel Company, Ltd., a marketing concern. It operates in Peru with a refinery and shipping port at Talara. It owns nine tank steamers, with a combined capacity of 55,000 tons, and will soon complete a 20,000-ton vessel. This company purchases large quantities of Mexican oil.

The Tropical company acquired the lands of the de Mares concession, fronting on the Magdalena river in the Department of Santander, extending

Twenty-Four Hours Nearer to New York

THE saving in tanker tonnage in transporting oil from the fields of Colombia to the east coast refineries of the United States, as compared with transportation of it from Tampico, is graphically shown in the accompanying article, which is the first installment of a report just given out by the Latin-American division of the Bureau of Foreign and Domestic Commerce.

¶ The report discusses the various fields, their location and operating conditions to be met with and gives the names of companies that have been and are operating there and the approximate extent of their operations.

¶ Among the interesting facts is that the crude produced in the Santander del Sur, or southern fields, in the province of Santander, is of 35 gravity and produces about 40 per cent of gasoline.

mountain range; and south as far as the Rio Carare. The area is estimated to be between 2,000,000 and 3,000,000 acres. The company has exclusive rights to the products of the subsoil and to the use of any government lands in Colombia for purposes of laying pipe lines and the privilege to condemn or pay and arbitrate for private property for this purpose.

Operations of the Tropical Company

This company has drilled three wells, located about 30 miles southeast of Barranca Bermeja, at the junction of the Rio Oponcito with the Rio Colorado. The wells have depths of 1,700, 1,900, and 2,300 feet, respectively, are all of the gusher type, and lie within a few hundred yards of each other. Their combined daily production has been estimated at 8,000 to 15,000 barrels. Two of the wells produce oil of both a paraffin and asphalt base. Well No. 1 tests out about 36 degrees Be. and yields 30 per cent gasoline of 58 degrees and above, 32 per cent of gasoline of 54 degrees and above, 6 per cent kerosene, 20 per cent lubricating oil and 12 per cent asphalt. The drilling on well No. 4 has been suspended pending the completion of pipe lines and storage tanks.

Probably $1,000,000 has been spent by the Tropical company in development. Headquarters have been established at Barranca Bermeja, where a 55,000-barrel tank has been completed. Another tank of like capacity is being constructed at the wells. Buildings for offices, quarters, machine shops, and storehouses, have been constructed. Barranca Bermeja is being connected with the wells by a good wagon road, along which a 6-inch pipe line will be laid to bring the oil to a small refinery being erected at Barranca. This refinery will be of sufficient size to supply Colombia with refined products, which, according to an agreement with the government, must be sold in Colombia at prices not greater than New York prices. Refined gasoline has been selling in Colombia at about $1.30 per gallon.

The problem of this company is principally one of transportation. It is 400 miles to tidewater on the Caribbean coast, thru heavy, tropical jungle. A pipe line from the wells to the Caribbean coast, including pumping stations, tank storage, and loading facilities, will cost between $15,000,000 and $20,000,000. In view of the merger of this company with the Standard Oil interests it is assumed that development operations on this property will now go forward on a large scale.

Barco Concession—Carib Syndicate, Ltd.—Colombian Petroleum Co.

The Barco concession occupies the entire northern part of the Department of Santander del Norte and is situated directly opposite the proven oil fields of the Maracaibo region of Venezuela. The concession contains about 1,500,000 acres. Many seepages and springs of high-grade oil occur thruout the property. From one such spring Gen. Barco has dipped from 15 to 20 barrels of high-grade oil per day and run it thru a crude refinery which he constructed on the property.

This concession was taken over by the Carib Syndicate, Ltd. (American) in 1917. This company was incorporated in New York in 1915. The concession carries the privilege of the exploitation of asphalt and coal. The government is to receive 10 per cent of the gross production and retains certain other measures of control. The Carib Syndicate now has a 25 per cent interest in the Colon Development Company, a subsidiary of the Royal Dutch, which has 4,500,000 acres in Venezuela. After considerable exploration work on the Barco property the Carib Syndicate transferred three-fourths of its interest therein to the Colombian Petroleum Company (Doherty interest of Pittsburgh). This company is to do the development work on a royalty basis, and already has commenced a well on the banks of the Rio del Oro, approximately 300 yards from the big well of the Colon Development Company, in Venezuela. Latest official reports show the well down about 800 feet, where caving was experienced and casing being set. A good showing of oil was made at a shallow depth, but the petroleum sand is expected at about 1,200 feet. Drilling machinery for several wells is being imported thru Venezuela via Lake Maracaibo and the Catatumbo river.

Interest in Colombian Fields

The following companies have manifested an interest in the petroleum resources of Colombia, either by acquisition of property thru purchase, lease, or concession, by exploration, or by resident observation:

Prudential Oil Co.
Gulf Oil & Transport Co.
Sinclair Oil Co.
Ohio Cities Gas Co.
Island Oil & Transport Co.
Standard Oil Co.
Union Oil Co. of California.
Atlantic Oil Co.
Martinez Oil Co.
Cartagena Oil Refining Co.
Tolima Oil & Refining Co.
Tropical Oil Co.
Colombian Petroleum Co.
Carib Syndicate.
St. Clair Oil Co.
Aaronson Interests, Oklahoma.
Three Seas Petroleum Co. (Kelly interests).
Atlantic Gulf & West Indies Co.
Transcontinental Oil Co. (Benedum-Trees).
Leonard Exploration Co.
Emerald Oil Co.
Guffey-Gillespie Oil Co.
West India Oil Co. of Texas.
Antioquia Petroleum Co.
Magdalena River & Coast Oil Co.
Midco Co. of Tulsa.
Marland Refining Co.
National Petroleum Co. (composed of prominent Colombian citizens).
Bradford Colombia Oil Co.

British

Balfour-Williams Co., Ltd.
Colombian Mining & Exploration Co., Ltd.
Lobitos Oil Co., Ltd. (Peru).
Royal Dutch-Shell.
Anglo-Persian, Ltd.
Alvez Financial Group, London.
Jenks Financial Interests, London.

Diego Martinez & Company, of Cartegena, wealthy land and cattle owners, in 1905 received a concession to run for 20 years which established a practical monopoly on the oil-refining industry for the Caribbean coast of Colombia. In 1908 the Cartegena Oil Refining Company was founded by these interests. In 1915 this firm was paying dividends of 60 to 90 per cent on an investment of $150,000, using crude oils from the United States and supplying the coast and interior country with refined products.

Development Dependent on Equitable Laws—Old Colombian Laws

Before development can successfully proceed it is essential that the laws of a country shall fairly protect both the government and the capital which it hopes to attract. Particularly should the mining laws affecting petroleum development be favorable to the industry on account of the highly speculative and prospective nature of the business. The mining laws of a country usually have as their object the accomplishment of one or both of the following purposes—revenue to the government or a development of the natural resources. These objects are not antagonistic, but the former may be, and sometimes is, made to defeat the latter purpose. Taxation for purposes of revenue may be made so high and onerous that development does not take place, the law thereby defeating the results desired, for neither is revenue received nor is development accomplished.

The mining laws of Colombia have heretofore been based primarily on the rules, laws and customs handed down by the Spaniards during colonial times.

An award of land by the Spanish crown usually carried with it the exclusive right to the mineral wealth contained therein. After securing its independence from Spain, Colombia began to construct new laws governing mineral rights. Simon Bolivar promulgated in 1829 a decree to the effect that all subsoil belonged to the nation. A law of October 28, 1873, provided for the adjudication of all land titles in the country originating from the old Spanish grants, and reserved to the nation the rights to mines and to the subsoil on public lands adjudicated after that date to private companies and individuals, hence lands secured from the government subsequent to that date do not carry ownership of the subsoil either for precious metals, coal, asphaltum or petroleum.

An executive decree of June 20, 1919, declared for the policy of government ownership of the subsoil under all circumstances, making all land laws retroactive to the decree of Bolivar in 1829, established a bureau of statistics for petroleum mines, and provided for government supervision and control in all lines of the industry. The supreme court of Colombia, in November, 1919, declared unconstitutional articles 3, 4 and 5 of the executive decree of June 20, 1919, and declared that the government did not have the authority to concede to third parties the right to explore mines of petroleum in lands that belong to private individuals; to limit in any way the right of the private owner to develop the mines situated in his lands, or to enter into contracts with regard to those mines with third parties.

(To be Continued)

Lower Homer Field Extended By Well Estimated At 7,000 Barrels Maximum

By Special Correspondent

SHREVEPORT, LA., Oct. 15.—The feature of the week's report of completions of wells in the North Louisiana field is the bringing in late Wednesday of the United Oklahoma Oil & Gas Company's Shaw B-8, in 25-21-8, in the Homer field, at 2,035 feet, with an estimated production of 7,000 barrels daily. This well extends the lower Homer field by more than 600 yards, and is considered of great importance. The same company is now drilling at 700 feet on its No. 7 well, and a derrick has been erected for No. 6 on the same 40-acre lease.

The report for the week is decidedly better than for the previous week for the Homer district, and a slight improvement is noted in the Bull Bayou output. The total new production added during the week in the North Louisiana fields was 8,337 barrels. Three failures are reported from as many counties in Arkansas, with no successful completions, as yet, in that state. Following is a detailed report for the week:

Average Daily Production

The daily average production in North Louisiana for the week ending Thursday, October 14, was:

Caddo light, 8,800 barrels.
Caddo heavy, 8,700 barrels.
DeSoto and Red River, 14,300 barrels.
Homer District, 55,000 barrels.
Total daily average for the week, 86,800 barrels.

Caddo Parish

Louisiana Consolidated O. & R. Company, Hoss No. 18, in 24-22-15, at 1,056 feet, 40 barrels.

Adamson Oil Company, Muslow oN. 3, in 4-20-15, at 2,189 feet, 50 barrels.

W. G. Strange Oil Company, Youree No. 1, in 26-20-15, at 3,212 feet, abandoned.

Claiborne Parish

Standard Oil Company, Lowenberg No. 2, in 18-21-7, at 1,432 feet, 35 barrels.

Standard Oil Company, Shaw-Palmer No. 24, in 25-21-8, at 2,038 feet, 900 barrels.

Standard Oil Company, Wheeler No. 10, in 17-21-7, at 1,486 feet, 50 barrels.

United Oklahoma O. & G. Company, Shaw B-2, in 25-21-8, at 2,037 feet, 200 barrels.

United Oklahoma O. & G. Company, Shaw B-8, in 25-21-8, at 2,035 feet, 7,000 barrels.

Bull Bayou District

Atkins & French, Mason No. 2, in 28-12-11, at 2,536 feet, abandoned.

Dominion Oil Company, Nelson No. 6, in 6-12-10, at 2,816 feet, 5 barrels.

Sinclair Oil Company, Nelson B-4, in 31-13-10, at 2,775 feet, 21 barrels.

Standard Oil Company, Robinson No. 1, in 33-13-10, at 2,810 feet, 6 barrels.

W. G. Strange O. & R. Company, Nelson No. 10, in 8-12-10, at 2,765 feet, 9 barrels.

Boone Oil Company, Giauque No. 2, in 5-11-11, at 2,708 feet, 6,000,000 cubic feet of gas.

Continental Asphalt & Petroleum Company, Ramsey-Robertson No. A-3, in 25-13-11, at 2,855 feet, 15 barrels.

Texas Petroleum Company, Jenkins No. 1, in 3-12-12, at 1,307 feet, abandoned.

Avery & Burgin, Johnson No. 2, in 17-12-10, at 2,525 feet, abandoned.

Gulf Refining Company, Gray Hook No. 10, in 5-12-10, at 2,887 feet, 5 barrels.

Gulf Refining Company, Gray Hook No. 12, in 5-12-10, at 2,777 feet, 100 barrels.

Gulf Refining Company, Gray Hook No. 13, in 5-12-10, at 2,780 feet, 101 barrels.

Rapides Parish

E. P. Sims, Rapides Lumber Company, No. 1, in 13-2-3, at 2,670 feet, abandoned.

Panola County, Texas

The Texas Company Adams A-2, in Matthews H. R. sur. 40,000,000 cubic feet of dry gas.

Arkansas

The Rebel Oakes well in Ouachita county, the Caldwell O. & G. Company well in Bradley county, and the Forest Oil Company well in Union county, were abandoned.

Gilmer County Gets 600-Barrel Producer

By Special Correspondent

PITTSBURGH, PA., Oct. 16.—Due to the discovery of a 600-barrel oil well in the Maxon sand development in Gilmer county, W. Va., the past trade week was one of the most eventful periods the year has witnessed. A few years ago the Cabin Creek and the Big Sandy districts occasionally produced 300 to 700-barrel wells, and each week saw the completion of a few notable producers, but this is another year and wells even of the 100-barrel type are scarce. Thus far the good wells in the Maxon sand pool have been confined to a few companies, notably the South Penn Oil Company and the Philadelphia Oil Company. The 600-barrel well is owned by the South Penn Oil people, and it is No. 6 on the W. F. Weaver tract. The well came in around 100 barrels and the maximum output resulted from its being shot. Both companies have a number of test wells under way.

The South Penn well is on Little Laurel run of Tanner's creek, DeKalb district, and on the same stream the Philadelphia Oil Company completed a 125-barrel daily producer, being No. 8 on the E. Weaver tract of 30 acres. A third feature well of the week was a 190-barrel Clinton sand producer which the Plymouth Oil & Gas Company got on the Brian farm in southeastern Ohio. The well, No. 9, is 700 feet south of No. 7 on the same farm. The rig is being built for No. 99. In the same locality the Plymouth company is drilling a test on the Lorne farm.

Outside of DeKalb district, the most active centers in West Virginia are the Berea grit extension in Sherman district, and the Berea grit pool in Reedy district, Roane county. Indeed, Roane county ranks close to Gilmer county in volume of new work. Ritchie county shows the great activity in the shallow territory, while the Hope Natural Gas Company, with two tests under way, leads in the Walker district, Wood county.

Recent advances in Cabell and West Kentucky oils have been taken as favorable indications that Pennsylvania and West Virginia grades of oil will not be reduced at present, and this has given confidence to operators who must consider high operating costs in launching drilling projects.

Many Gassers in List

As winter approaches and one hears frequent emphasis placed on the importance of securing new gas wells, each gasser is considered of importance. Recent gassers have been of medium size, but more attention is given the product than formerly. Last week wells listed as gassers included the following: Carnegie Natural Gas Company, No. 3 on the Church farm in Clay district, Wetzel county; Manufacturers Light & Heat Company, second test on the Cosgray farm in Church district; Eastern Petroleum Company No. 5 on the Wilson farm in Mannington district, Marion county; Carnegie Natural Gas Company on the Park farm in Battelle district; West Virginia Traction Company on the Neely farm in Cass district, Monongalia county; Carnegie Natural Gas Company on the Woodruff farm in Liberty district, Marshall county, also a gasser on the Yeater farm; Manufacturers Light & Heat Company on the Buzzard farm in Liberty district; South Penn Oil Company No. 68 on the Blackshere-Wells property, in Grant district, Wetzel county; Freehold Oil & Gas Company on the Clovis farm in Murphy district, Ritchie county; Hope Natural Gas Company, million cubic foot Big Injun sand gasser, on the Stup farm, near Grantsville, Calhoun county; Imperial Oil & Gas Products Company, on the McKinley farm, Union district, Ritchie county; and West Virginia Central Gas Company, Gerwig farm, Otter district, Braxton county.

Roane county's best well of the week was a 25-barrel producer which the Heck Oil Company got on the Stanley farm on Brushy fork of Big Sandy, Reedy district. It will be shot and the production may be doubled. Other West Virginia oil wells follow: Umpleby Oil Company, 7 barrels from No. 3 on the Adams farm in Union district, Pleasants county; Eastern Petroleum Company, 5 barrels from No. 5 on the Wilson farm on Messer run, Mannington distrist, Marion county; Reserve Gas Company, 10 barrels on the Camden farm, Freemans creek district, Lewis county; Ohio Fuel Oil Company, 5 barrels, Summerville farm, Poca river, Smithfield district, Roane county; Imperial Oil & Gas Products Company, 4 barrels, No. 5, Simmons farm, Central district, Doddridge county; Raccoon Oil & Gas Company, 15 barrels, Young farm, Ten Mile district, Harrison county; Maxon Oil Company, 15 barrels in the Maxon sand from a well on the Huffman farm in Church district, Wetzel county; Great Elk Oil & Gas Company, 5 barrels, Baughman farm, Calhoun county; Clarksburg Light & Heat Company, No. 3, 5 barrels, Morrison farm, Eagle

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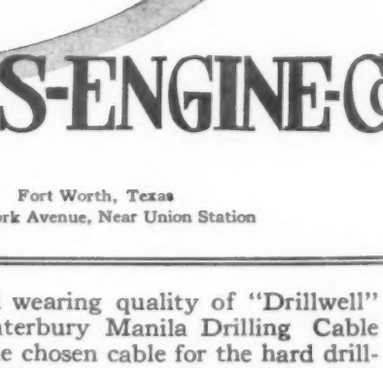

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district, Harrison county; Packard Oil Company, 10 barrels, Rucker farm, Cincinnati Oil & Gas tract, on Wills creek, Big Sandy district, Kanawha county; Seldon Stone, 15 barrels on the Country Club lot, located on the bank of the Ohio river in Williams district, Wood county; South Penn Oil Company, 10 barrels from No. 69, Blackshere Wells property, Grant district, Wetzel county; Briscoe Oil Company, 20 barrels in the Berea grit, on the Hammett farm, Williams district, Wood county; Bails Oil & Gas Producing Company, 5 barrels, Reynolds farm, Washington district, Pleasants county, and Drake Oil Company's No. 7, also 5 barrels, on Rowell farm, Washington district.

Ohio and Pennsylvania

As usual, Hocking and Licking counties are the most attractive Ohio centers in oildom. Important tests are under way in Ward and Greene townships, Hocking county, by the Plymouth Oil & Gas Company, the Carter Oil Company, Ohio Fuel Supply Company and Pure Oil Company. In Springfield township, Muskingum county, the Maysville Oil Company drilled a test on the White farm into the Berea grit and tapped salt water. In Perry township, Licking county, the Arkansas Fuel Oil Company test on the 17-acre Montgomery tract produced 10 barrels daily when it tapped the Clinton sand. The Pure Oil Company is due at two tests in Licking township, Muskingum county.

Operating in the northwest quarter of Sec. 35, Falls Gore township, Hocking county, the Preston Oil Company's No. 6 on the Hite farm is a 5-barrel pumper. The Ohio Fuel Supply Company got a 1,000,000 cubic foot gasser in Swan township, Vinton county. The Neighbors Oil Company brought in a 10-barrel Clinton sand producer when it completed a joint well on the Stewart-Reason acreage in Bush Creek township, Fairfield county.

The indications for a good pool in Unity district, Plum township, Allegheny county, Pa., and a considerable amount of new production, are quite favorable. Within the past few days three new wells have been drilled in. They are owned by the American Natural Gas Company, No. 3 on the Myerite McMahon farm, Clarke & Vincent's test on the H. McComb farm and the Philadelphia Oil Company's second test on the A. Elicker farm. They are swabbing the production from three wells and later will put them to pumping. They are estimated to be good for from 20 to 30 barrels a day. In Gilmore township, Greene county, Pa., the People's Natural Gas Company has a gasser in the Bayard sand at a test on the Whitehill heirs' farm. In the same township the same company has a fifth sand gasser at a test on the Barney Lemon farm. In Springhill township the Marshall Oil Company's second test on the John Kuhn farm is producing 15 barrels a day.

TULSA, Oct. 15.—The Sinclair Consolidated Oil Corporation manufactured thru its various casinghead gasoline plants, 1,327,804 gallons of raw casinghead during the month of September, an average of 34,260 gallons a day. This represents an increase of roughly 67 per cent over the corresponding month of last year.

Pipeline Extensions And High Prices For Crude Encourage New Operations

By Special Correspondence

LEXINGTON, KY., Oct. 16.—With western Kentucky crude now commanding a price of $3.93, additional zest has been given the big drilling campaign which centers in Warren, Allen, Simpson and Barren counties with considerable work in other proven sections of the state and additional wildcat tests starting each day.

Purchasing agencies are adding materially to their gathering lines and a number of wells completed some time ago in the southwestern area are being added to the list of producers each week. At no time in the history of the Warren-Allen county field has the maximum production been taken out, and with the increased pipe line facilities crude oil averages are expected to take a sizable jump.

The Indian Refining Company, one of the largest purchasers of western Kentucky crude oil, is moving 50,000 to 75,000 barrels monthly from that field, and other buyers are taking approximately an equal amount. Warren county now contains a definite pool twelve miles long and four to five miles wide. The producing area extends well into Allen county, while recently developed pools in Simpson county indicate an extension of the same sand.

The Stoll Oil Refining Company is running oil thru its pipe line from Memphis Junction, Barren county, from the Roundtree and Garner leases, taking all the production in that vicinity. The company has also started work on a pipe line from Woodburn, and is putting in a siding and loading rack there. The oil will be shipped to the Louisville refinery of this company.

Some excitement has been caused at Perryville, Boyle county, by the discovery of oil on the Mackville pike, about one and a half miles east of the town and near the historic battlefield of Perryville. The find was made by Edward Watkins while he was drilling for water on the Claunch farm. At a depth of less than 100 feet the drill struck black oil. A specimen was submitted to Dr. Coolidge, head of the chemistry department of Centre College, who said the exact quality of the oil could not be determined without analysis, but it had the appearance of heavy petroleum product.

Old residents of Perryville say that on the battlefield during the Civil War, a Pennsylvania company was drilling for oil and finished one well just as the soldiers began to arrive for that most noted of battles in Kentucky. The well was plugged, the drillers loaded their rigs on wagons and left in a hurry. None ever returned. The location of the old well is not known by anyone now at Perryville.

Warren County

A big gas well has been struck on the McElroy lease in South Warren county at 400 feet. The well is likely to be sunk deeper.

Harry Kerstatter and Richard Veitch, drilling at Briggs No. 1, have a 100-barrel pumper.

The New Era Oil Company is pumping No. 2 on its leases at the rate of 45 barrels daily. Nos. 3 and 4 are drilling.

W. M. Hodges and Field Manager O. A. Knight report No. 4, J. L. Jenkins lease, Davenport pool, showing for 200 barrels. It came in at 488 feet.

Well No. 2, S. A. Kelly, Warren county, flowed 750 barrels in twelve hours. The depth is 473 feet, which is six feet less than well No. 1, brought in two months ago, now producing at the rate of 60 to 70 barrels a day. The lease is connected with the pipe line of the Indian Refining Company.

The Arco Oil Trust has a 100-barrel well on the John Covington lease.

The north Texas Fuel Oil Company's No. 2 Kelly lease, Warren county, came in at 473 feet, and is making 50 barrels an hour, according to best estimates. The well caught fire and burned for several hours, the rig being destroyed. When well No. 1 was brought in on this lease several weeks ago, that well also caught fire, the driller was burned to death and the rig was destroyed.

The White Oil Corporation has a good well, capacity not determined, at its Harveson-Ford lease, at 781 feet. A 250-barrel tank was soon filled. Another well is down 200 feet on this lease.

Williams and associates have a 35-barrel-an-hour well in the Warren county field. Earthen storage had to be made to save the oil, as tanks had not been erected when the drill struck oil at 409 feet.

George D. Morrison reports a 100-barrel well at No. 2, Phelps lease, for the Richmond Oil Company. The well is 351 feet deep.

McKinney & Power are spudding in on their Blankenship lease.

The Indian Refining Company has a 75-barrel well on the Harry Lazarus lease, at 438 feet.

A substantial flowing well, capacity not determined, has been completed by Williams and associates on the Perry lease. The well came in unexpectedly and despite the tools in the hole, oil shot high above the rig, flooding the ground for a considerable distance.

Downs & Company have a 20-barreler on the George Dixon lease. The depth was 915 feet.

The Ohio Oil Company has a duster on the A. C. Cherry lease, Warren county. The company is drilling now at No. 1 location, Mary Jenkins lease.

The John Covington well No. 4 is reported to have made 115 barrels in 15 hours. The well is 368 feet deep.

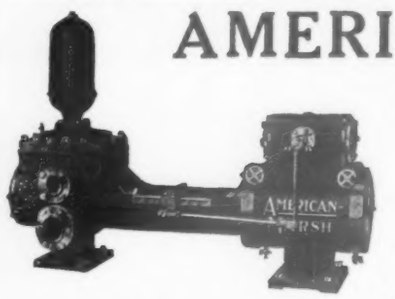
Sibert well No. 1, Warren county, shows pipe line runs of 6,000 barrels in three weeks. The well was completed at 480 feet, and after it has been flowing a month, it is keeping up its production as told. This is the biggest well in the Warren county field.

Johnson County

The Kentucky Counties Oil Company has erected a supply house and camp cottages on the J. P. Conley lease, Johnson county, and will push development. This company already has two machines operating in Magoffin county.

The Johnson-Magoffin Petroleum Company is sinking a test on the Enoch Bailey lease.

Drilling is being pushed on several wells at Staffordsville as well as on Barnett's



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creek and on Gullett branch of Big Paint creek. On Barnett's creek, Johnson county, the Emden Oil Company's No. 1 has been tubed and No. 2 has been started. At Gullett branch, same county, the Big Paint Oil Company has been shut down for a few days because of water shortage. In the same vicinity, the Hitchcock, McClelland & Prindible well is being spudded in.

Simpson County

Paul E. Terry, of San Francisco, acting for an oil syndicatee, has completed the biggest deal ever made in Simpson county, when he purchased the holdings of the Lick Creek Oil & Gas Company. The price was not made public. Terry has set up a 100-barrel tank on the James Pearson lease and has a 200-barrel tank in transit. He is having a pipe line extended to the lease and will clean out five wells at once and connect them.

Neaville & Company report a well on the Goodnight lease worth 45 barrels. The well is only 195 feet deep, penetrating the pay 15 feet. No. 1, same tract, same company, is worth 15 barrels.

Stacy and associates, representing a Chicago syndicate, has moved a rig to the Joe Lucas farm, and will develop it at once.

The White Plains Oil Company will drill in No. 1, Stamps lease, this week. This is in comparatively new territory.

The Weidemann Oil Company is moving a drilling machine to the Venson Reeder lease, and will begin operations at once. The Seaboard Oil Company is also preparing to develop in the same vicinity on the Roark lease.

The Irving J. Brown Oil Company has a small well on the J. B. Wright lease.

The Trammel Creek Oil Company is drilling No. 4, S. J. Thomas lease, and is installing a power plant on Mrs. F. Foster's lease; moving a rig onto the Bailey Ayres lease and tubing No. 1, Curtis Stamps lease.

J. H. Buttner has completed a big well on the Hobdy lease. The well flowed after being shot, but its capacity has not been determined, as it has not been put to the pump.

The Goodnight Oil Company has a 25-barrel well at No. 2, Goodnight lease. No. 3 is drilling.

The Ohio Oil Company has a small producer at No. 1, Jones lease. Nos. 2 and 3 are expected in at any time.

Weeks and associates have a 10-barreler at No. 1, Dan Atchison lease, Simpson county. The well is 370 feet deep in the Beaver sand. The Blue Goose Oil Company has a small well at No. 2, Maves lease. Several other wells will be drilled in the vicinity.

Other Operations

Pratt & Goodrich, drilling in Franklin county, seat of the state capitol, have ordered another well sunk on their holdings. The men in charge of the first wells drilled in Franklin county had the sand thru which they passed before they struck salt water examined at the Kentucky Experiment Station, Lexington, which reported a good oil sand. The next shaft will be sunk to 1,200 feet. Gas was struck at several levels in the earlier wells, and at one time became so dense that operations had to be suspended all night. The next wells will be drilled to a greater depth.

Victor M. Cook and associates have made three locations on the Sullivan Hill anticline, Todd county. Two rigs will be started immediately.

Some Problems Confronting The Petroleum Industry

By William A. Hamor

AT the close of 1919 approximately 4,986,300,000 barrels of crude oil had been produced in this country since the first well was drilled at Titusville, Pa., in 1859. This is about 43 per cent of the original recoverable content, as estimated by the United States Geological Survey. All this oil that has been mined in the United States in sixty years would be taken out in thirteen years at the present rate of production.

Impressive as this fact may be, it is not so disturbing as the realization that the recoverable crude petroleum in this country, according to the conservative estimate, would probably be practically exhausted in seventeen years if the 1919 rate (nearly 380,000,000 barrels of production) could be maintained for so long, while a reserve of 7,000,000,000 barrels, the moderately liberal estimate, would disappear in eighteen and one half years.* If an improbable excess of 2,500,000,000 barrels over the estimated amount is present, this excess would be sufficient to sustain the present draft for six and one half years additional.

What improvements will in the next ten years be made in the process of extraction of crude oil from the ground, and what the effects may be in recovering the great amounts of crude petroleum not "available" or recoverable by present methods, remains to be seen. It is probable that not much over 20 per cent of the oil underground is brought to the surface. It is most important that studious attention be given to the problem of the more complete extraction of the petroleum than is possible by the methods now in general use. Records of wells should be kept, surface and underground geology should be correlated, oil-sands should be examined, and if possible underground losses should be determined. The estimated available supply should be increased in this way to the maximum. It is noteworthy that while the petroleum industry has been supplied with technical means whereby certain wastes in production may be combatted, there has been provided no adequate machinery for applying this knowledge.

Fortunately, however, the crude petroleum cannot so soon be taken from the ground. Even unparalleled prices for crude oil, and exploratory work far more extensive than that now in progress, cannot within the next generation disclose all the oil pools in the strata; and altho devices for more rapid extraction may be invented and applied, the fields which remain to be discovered cannot be drained so rapidly. Oil pools will be found, finally by accident, long after the search has waned, and even in the next century. These are some of the reasons why the production of natural petroleum in the United States must pass its peak at an early date—probably within five years and possibly within three years—while the long sagging production curve may be carried out beyond the century. It is certain that this country must in the near future lose its supremacy in the petroleum world and become more and more dependent on the oil resources of other lands,* except in so far as the situation may be saved by the successful production of artificial petroleum (crude shale oil) by the destructive distillation of American oil shales.

To depend on oil shale, however, is to trust to uncertainties both as to costs and as to ultimate results, and is at best to superimpose on our present social and industrial fabric an enormous and complex new industry rivaling in part our coal-mining, salvaging but a part of our present petroleum industry, and requiring many years for its development. Sooner or later—perhaps within five years—a commercial shale oil industry may be born in this country, but that it can originate soon enough or become large enough to offer any considerable contribution before our domestic petroleum production is already on the wane seems improbable. Finally, if shale oil yielding the principal and indispensable petroleum products cannot successfully be produced and marketed as cheaply as natural petroleum from other countries, the public cannot be expected to build up and sustain a shale-oil industry, unless it be under subsidy as a protective measure.

A British oil ecenomist has calculated that by 1925 the petroleum requirements of the United States will exceed 500,000,000 barrels, and that at a later date our country will become more and more dependent upon British supplies. An American authority, W. C. Teagle, president of the Standard Oil Company of New Jersey, has estimated that in 1925 the requirements of the petroleum industry in this country will approximate 650,000,000 barrels, an increase of more than 220,000,000 barrels over the requirements of 1919. Unless conservation of petroleum thru curtailment of use—for example, as fuel burned under steam boilers to generate steam—is forced automatically by the scarcity of crude oil and consequent prohibitive prices, or is sooner and more wisely brought about artificially by regulation, it seems probable that the demand of the American petroleum industry will considerably exceed 600,000,000 barrels, or possibly 650,000,000 as estimated by Teagle, in 1925, altho by that time our exportation of refined oils to some of the foreign markets will probably be reduced by the competition of foreign oils nearer at hand and more cheaply produced.

A drain of over 500,000,000 barrels, even if the yearly effectual demand be not further increased, would, if taken from the oil fields of the United States, probably exhaust the petroleum resources remaining available in the ground in fourteen years, or in sixteen years if it is assumed that the recoverable petroleum possibly amounts to so much as 8,000,000,000 barrels, which seems very improbable to geologists. It is fortunate for the country that the petroleum cannot be extracted so rapidly. On the other hand it also seems quite improbable that an annual production of natural petroleum amounting to so much as 450,000,-

How To Meet Demand For Oil

IN the accompanying article, an extract from a paper published in Chemical and Metallurgical Engineering, Mr. Hamor, who is assistant director of the Mellon Institute of Industrial Research of the niversity of Pittsburgh, and internationally recognized as a petroleum technologist, discusses the coming demand for petroleum in relation to the domestic supply of crude. In common with other experts, he concludes that the domestic supply will not be equal to the future demand. The problem, he states, can be met by:

1—Obtaining greater supplies of crude oil.
- a—By increasing importations from foreign fields.
- b—By participating in the development of foreign fields.
- c—By establishment of a shale oil industry.
- d—By increased recovery from our oil fields from more efficient operating methods and elimination of waste.

2—A better utilization of the crude now available.
- a—By cracking of fuel oils into gasoline.
- b—By the development of gasoline substitutes.
- c—Thru the development and use of Diesel type engines utilizing heavier fuel oils.

*Dr. David White, of the United States Geological Survey, has furnished these data.

*On the restrictions imposed by certain foreign countries upon citizens of the United States in prospecting for or acquiring lands containing petroleum, see Senate Document 272, May 17, 1920.

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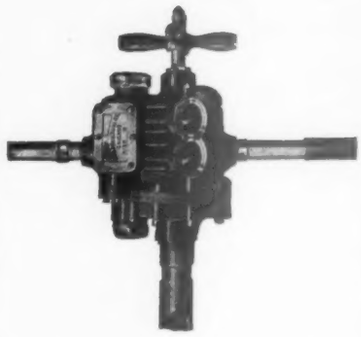

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000 barrels can be won in any year from our domestic oil fields, the peak of whose production is likely to be passed by 1925.

All circumstances being considered, it must be expected therefore that, unless our consumption is checked, by 1925 the United States will be dependent on foreign oil fields to the extent of 150,000,000 barrels, and possibly as much as 200,000,000, of crude oil each year, except in so far as the situation may by that time, perhaps, be helped to a slight extent by shale oil.

Add to this probability the other greater probability that within five years—perhaps three years only—our domestic production will begin to fall off, with increasing rapidity, due to the exhaustion of our reserves, and it becomes evident that, except for such relief as may come from shale-oil production, the future of the United States in petroleum will yearly become more and more completely dependent on supplies to be brought from foreign fields.

As the outlook now must be viewed, it is practically certain that after a time the United States will be buying petroleum from commercial rivals in quantities greater by far than ever have been sold to them, to make no mention of the prices paid. But, while this may be impreventable, it should be escaped as far as possible. If our nation is to have these oils as cheaply as they are sold in the home countries; if our industries, our transportation, our navy and our standards of living are to be safeguarded in advantages as great as those of our rivals, and if our merchant ships are to obtain their fuel oil at prices as low as those paid by rival ships, the oil supplies needed must be in our control.

Experts believe that the most conspicuous developments affecting the sources of the world's supply of petroleum in the next decade will occur in the countries that border the Caribbean Sea and the Gulf of Mexico. Within the last four years the annual production of petroleum in Mexico has increased from 21,000,000 barrels to 56,000,000 barrels, and the potentialities of future production in that country have been demonstrated. It is estimated by T. C. Thomson* that the ultimate expected production will equal, if not surpass, the whole production of the United States. Its product, originally considered valuable only as a source of fuel oil, now is yielding, by modern refining methods, increasingly important percentages of illuminating oils and gasoline. The hindrances to enormously increased production are unsettled political conditions and inadequate facilities for marine transportation, but these obstacles doubtless will be surmounted within the next few years.

To summarize, the future domestic supply of crude petroleum will not be equal to the future home demands. This problem can be met by:

(1) Obtaining greater supplies of crude oil—

(a) By increasing the importations from foreign oil fields.

(b) By actively participating in the development of foreign oil fields.

(c) By the establishment of a shale-oil industry on a commercial basis as soon as is practicable.

(d) Thru increased recovery from our oil fields, resulting from more efficient operating methods, and especially the elimination of waste in production.

(2) A better utilization of the crude now available, principally—

(a) By the pyrolysis (cracking) of fuel oils into gasoline.

(b) By the development of gasoline substitutes.

(c) Thru the development and use of Diesel-type engines utilizing the heavier fuel oils.

*J. Inst. Pet. Tech., Vol. 5, p. 56.

Problems in Production of Crude

Among the development and production problems which require more study are the dehydration of emulsified petroleum and the prevention of its formation in oil wells. It has been learned that probably all emulsions in wells are formed after the oil has left the sand, and their formation often can be prevented. The systematic investigation of methods for excluding water from oil and gas wells, of the effect of water on the production of oil wells, and of casing and tubing problems, would lead to findings of technical value. Work on the employment of safety devices in the oil fields, the possible substitution of explosives safer than nitroglycerin for shooting oil wells, and the effects of shooting on wells, would be of utility.

Procedures for stimulating production and increasing the recoveries of petroleum from the sands, including the effects of vacuum pumping, use of compressed air or gas, and use of water flooding, present other opportunities for research. In this connection, pumping problems and equipment, including the use of automatic air and gas pumps, electrical equipment, and air lifts should be given attention.

Storage and transportation problems include losses of oil in storage, prevention of fires at tanks and wells, the flow of oils in pipe lines, and the construction of storage tanks and reservoirs.

Problems in Refinery Technology

The need of continuous study and research and training in hydrocarbon chemistry and in petroleum technology cannot be over-emphasized.* The lack of reliable general information has worked handicaps on the petroleum industry, which is, in many ways, groping in the dark. Similar errors are made repeatedly in the same territory by different operators, and both in drilling and in refining the various factors having a known influence are understood imperfectly in their relation one to another.

A large literature already exists on the subject of analytical napthology owing to the activities, among others, of the Bureau of Mines and the Bureau of Standards in the United States and of the National Physical Laboratory in England. What is needed now is the welding of these researches into a comprehensive whole by an international body of experts, which, sitting permanently like the pre-war International Petroleum Commission, shall institute researches into new methods of procedure and revise existing technic.

From the industrialist's viewpoint, the great problem in the petroleum industry is flexibility in refining, in order that there may be produced only those products which are in demand. In other words, there is wanted a suitable process which will enable the refiner to manufacture only the products for which there is a big market—say gasoline and lubricating oils. Research has been begun which has for its object the production of the desired finished oils, and only these, by purely phys-

*It is gratifying to note, however, that at least one American institution now is supplying trained petroleum chemists to the industry. Reference is had to the University of Oklahoma, where Prof. F. W. Padgett is giving systematic instruction in hydrocarbon chemistry and refinery technology.

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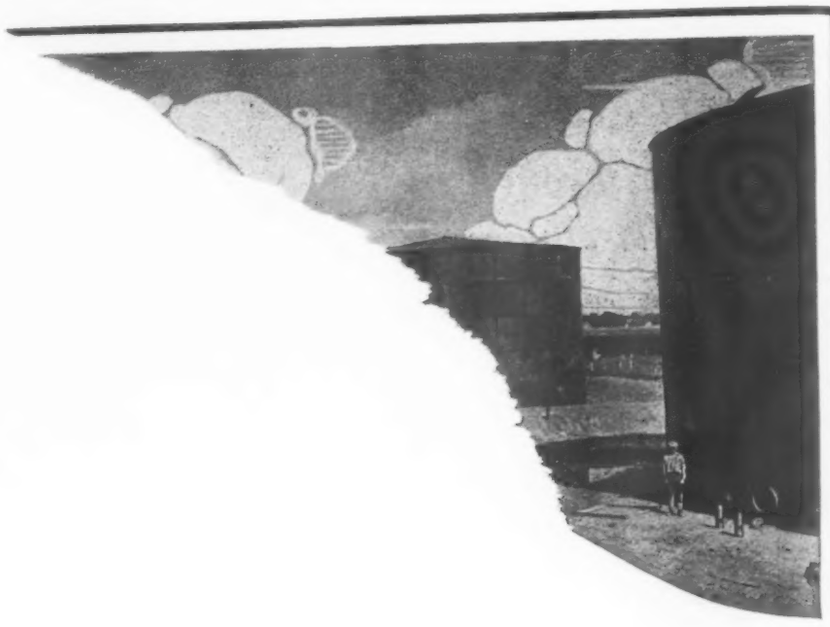

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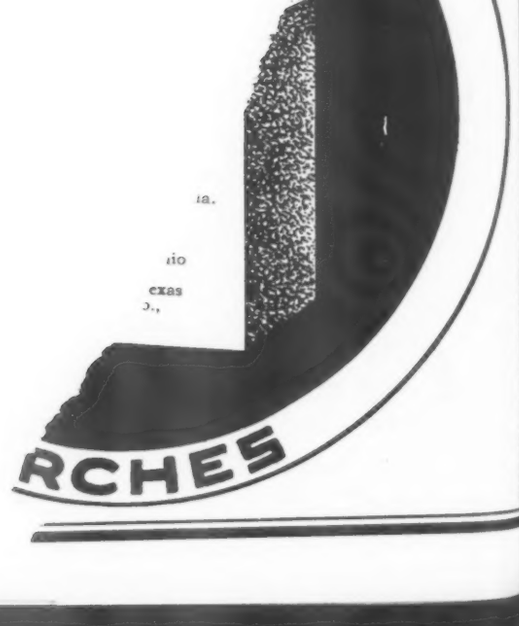

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ical methods, thus dispensing with chemical treatment.

If hydrogenation could be conducted successfully on a commercial scale the customary treatment with sulphuric acid could be dispensed with.

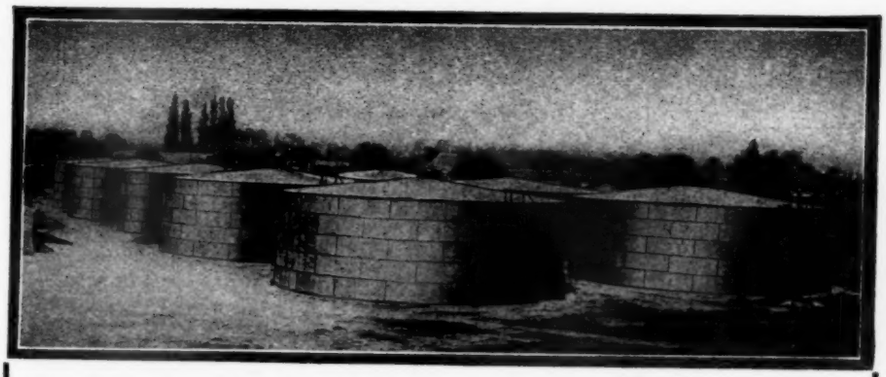
Hydrogenation with platinum black or nickel could be accomplished if an antidote were known for the poisonous effect of sulphur compounds on the catalyst. Another matter of interest here is the polymerization of olefines; this subject requires the consideration of research.

Automotive engineers should have available exhaustive data regarding the specification and use of petroleum products for internal combustion and lubrication purposes. Lubricating oils for special purposes have not received due scientific attention, and, as a result, the selection of a lubricant is more frequently casual than scientific. Lubrication is a special problem of colloid physics.*

It is singular that the subject of refining has attracted so little notice. In the chemical treatment of petroleum products systematic investigation, with the object of ascertaining the most favorable temperatures for the acid treatments of petroleum distillates, would be of practical value as affording an indication to the refiner how to proceed under all circumstances. Another well-known problem in refining is the chemical treatment of lubricating oils in such manner as to minimize the losses and to prevent the emulsions which result when sulphuric acid is used. The production of persistent emulsions in the refining of petroleum is a problem to be attacked from the colloid-chemical point of view. An economic process is needed for isolating pure napthenic acids of high molecular weight from waste lyes. A related problem is the utilization of the esters from the napththene carbo-acids contained in the residue from the alkali treatment. A question of interest here is: What is the cause of the cacodor of napththenic acids, and how may these products be deodorized most effectively and economically? The utilization of naththenic acids from California petroleum is under study.

The following are some of the many other problems confronting petroleum technologists: A more rational utilization of the butanes and pentanes in natural gas gasoline and in light petroleum fractions; does the hot still metal exert any catalytic action in the pyrolytic decomposition of residues; the minimization of the decomposition of sulphur compounds during the distillation of petroleum containing asphalt; what role do sulphur compounds take in the condensation of petroleum to asphalt; increasing the efficiency of tower stills, condensers, and heat exchangers; the rapid and effective revivification of spent fullers earth; the separation of the aromatic and cyclic unsaturated hydrocarbons from the paraffin and napthene hydrocarbons by a more satisfactory reagent than those now in use; the fractionation of petroleum residues containing paraffin wax into distillate and undecomposed amorphous wax; the elimination of gummy or asphaltic portions from wax distillate by a distillation or mechanical procedure; what constituents of a min-

*In fact, W. B. Hardy (J. Soc. Chem. Ind., vol. 38, 1919, p. 7T) has shown that we may look with confidence to colloid chemistry to assist us in finding the lubricants of the future.



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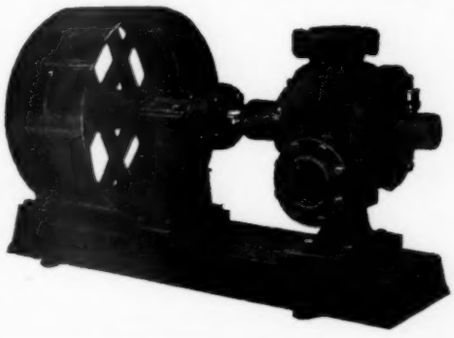

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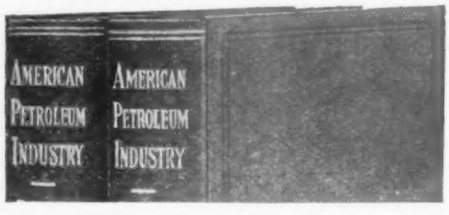

The American Petroleum Industry

by Raymond Foss Bacon, Ph. D and William Allen Hamor, M. A.

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eral oil are responsible for the lubricity thereof, and can the lubricating properties of an oil be increased in the light of this knowledge; the prevention of the oxidation of mineral oils in transformers; products which will make emulsions with water without any oil coming to the surface; and a rational plant for producing oil gas from tar and carbon monoxide from the residue, and mixed gases to be suitable for use in gas engines.

"Cracking," or pyrolysis, is regarded as the leading potentiality in petroleum refining, no less so because it permits the production of the main products according to demand, without sacrifice of by-product possibilities. The importance of the whole matter may be evalued by having regard to the fact that at present, even with "cracking" well launched into practice, less than one-half of the petroleum produced is manufactured into products representing an ideal aportionment of the raw material into its components. The manufacture of gasoline may be doubled eventually or even more greatly multiplied without increasing the production of crude petroleum.

The research activity on the subject of "cracking" has been notable, and the volume of patent applications shows no signs of diminution; in fact, the number of permutations and combinations of the variables borders on the infinite, and acordingly, while modifications of outstanding novelty will be rare, a variety of processes remain to reach the Patent Office. At the present time investigators are endeavoring to obviate the defects in nearly all the methods now in use, which are: (1) the accumulation of carbon, (2) loss of oil as fixed or permanent gas, (3) low yields, and (4) the formation of undesirable impurities.

The inclination to look upon the unsaturated products of "cracking" as valuable for synthetic chemistry is becoming pronounced. The fact that under high pressure the point of molecular scission is directed to the middle of the hydrocarbon chain, while at low pressure the point of rupture is displaced more toward the ends of the chain, holds out additional promise for the working out of commercial processes for the manufacture of isoprene, etc., from petroleum.

An insufficient amount of work is being done in a systematic way to show how to economize in the use of gasoline. A thoro investigation of carburetors and fuels, and certified tests of the performance of all makes of automobiles, would be of value in economizing in the use of gasoline, and giving the public as much service as possible for a given expenditure. The Bureau of Mines and the Bureau of Standards have studied different phases of this question, but neither has been able to conduct as much research as should be done. With over 7,000,000 of gasoline-driven automobiles in daily use, and motor gasoline constantly rising in price, the American public cannot afford to have the government fall short in a matter of so great economic importance and of serious personal concern to so many.

A very pertinent question is, should a higher final boiling point for gasoline be permitted? A final boiling point of 230 degrees C. would increase the available supplies by a considerable percentage, while greater efficiency in fractionation would result probably in an additional 10 per cent increase in yield.

Recementing Thru Tubing Under Pressure To Shut Off Water

The exclusion of water from producing formations has in recent months occupied the attention of production engineers and the federal and state petroleum technologists. The accompanying article is reprinted from the monthly report of the California state oil and gas supervisor and sets forth the studies of Mr. Thoms, who is deputy to the state supervisor.—Editor.

By C. C. Thoms

AN oil well completed in an ideal manner would be one in which each formation penetrated, except the ones from which production is to be secured, would be left sealed in its original condition. The securing of this ideal condition is often not practical, and in most cases is not considered necessary to obtain the maximum production consistent with the expense involved. However, an approach to this ideal condition is desirable for the reason that, if the various strata are not sealed, water may enter the oil or gas sands, preventing, or greatly reducing, the possible recovery of oil or gas from such sands; or, on the other hand, the oil or gas may enter the so-called dry sands, or may escape to the surface and become lost beyond recovery.

It is now almost universally recognized that the minimum protective work necessary narrows down to two requirements:

1. Excluding water from the production of the well.

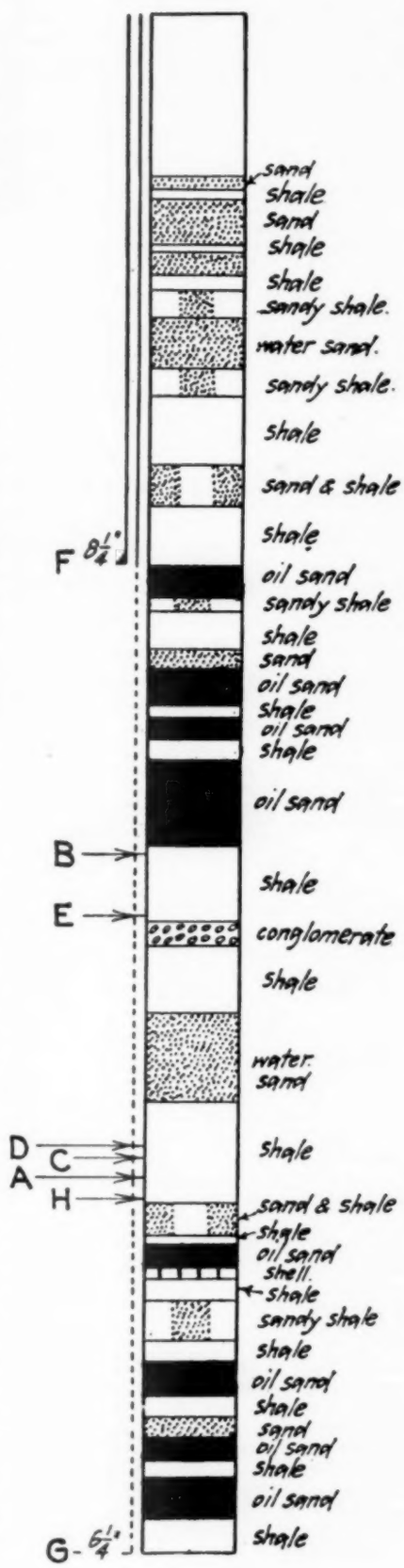
2. Preventing the migration of water, outside the casing, from water bearing formations to oil or gas bearing formations.

Of the methods used in California to shut off water, the ones now in most general favor involve the use of cement as a sealing medium. The various methods by which the cementing operation is performed have been quite thoroly covered in several bulletins issued by the State Mining Bureau and the United States Bureau of Mines, as well as in certain technical journals. However, one particular phase of shutting off water by the use of cement has not, to the writer's knowledge, received the attention to which it may be entitled, recementing thru tubing under pressure.

This method has been used to shut off water where the original cementing job failed and an additional attempt was made to secure a successful shut-off by forcing cement around the shoe of the water string.

It has also been used where cementing job was not entirely successful in excluding water from the well, the oil string being landed and cement being forced out thru perforations in the oil string near the shoe of the water string.

Water has been plugged off by this method in the lower portion of a well during abandoning or repairing a well. Water occurring between oil producing formations has been cemented off so that oil from both above and below the intermediate water could be produced thru a single string of casing.



In each case where the method is used, certain points of the procedure are identical, and are as follows:

1. Before placing the tubing in the well, circulation is established either to the surface or into the formation, thus demonstrating that cement can be forced out of the casing.

2. The well is tubed to the approximate depth at which the cement is to be placed.

3. A packing device of some kind is used to seal off the space between the tubing and the casing. This device is placed either at the bottom or the top of the tubing. The top packer or stuffing box casinghead method is the one now almost exclusively used.

Recementing Without Altering Casing.

A very large percentage of the cases of recementing are classed under the first division noted above, i. e., where the shut-off failed and an attempt was made to recement the well without casing alteration. By far the greater percentage of these attempts fail, probably for the same reason that the original shut-off failed. However, since the cost of the operation is small, and, if successful, may save a string of casing or even the redrilling of the well, it is usually advisable to give the plan a trial. In some instances, two or three recementing operations have been performed before securing a success.

The details of the operation are as follows:

1. The well is tubed to within about 10 feet of the shoe of the casing, and the tubing packed off at the casinghead, which should also be equipped with an outlet and valve.

2. With this outlet valve open, neat cement is pumped into the well thru the tubing until it is calculated that the cement has reached the shoe of the casing.

3. The outlet valve is then closed and cement forced out around the casing, either until no more cement can be forced out under a maximum predetermined pump pressure, or until the desired amount of cement has been forced out.

4. The outlet valve is then opened just enough to enable the cement remaining in the tubing, or between the casing and the tubing, to be washed from the well. The tubing may be raised the distance between collars during the operation. The washing operation may require several hours, but is continued until the excess cement has all been washed from the well. The well is then closed in and the pressure maintained for from a few hours to a day or more, while the cement is setting. A few instances of the successful use of the operation are noted below:

1. Five Star Oil Company.—Well No. 1, Sec. 32, T. 1 S., R. 11 W., S. B. B. and M., Montebello field. 8¼-inch casing recemented at 3,161 feet with 40 sacks of cement under a maximum pump pressure of 1,000 pounds per square inch.

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ited.—Well No. "Yarnell" 1, Sec. 29, T. 3 S., R. 9 W., S. B. B. and M., Richfield field, 10-inch casing recemented at 2,936 feet under a maximum pump pressure of 700 pounds per square inch.

3 Red Star Petroleum Company.—Well No. "Baldwin" 5, Sec. 6, T. 2 S., R. 11 W., S. B. B. and M., Montebello field. 6⅝-inch casing recemented twice at 2,683 feet. The first attempt with 15 sacks of cement under a pump pressure of 500 pounds per square inch failed; the second attempt, with 30 sacks of cement under a pressure of 400 pounds per square inch, was successful.

4. Standard Oil Company.—Well No. "M/C" 43, Sec. 19, T. 3 S., R. 10 W., S. B. B. and M., Coyote Hills field. 6¼-inch casing recemented at 3,670 feet under a maximum pump pressure of 1,100 pounds per square inch.

5. Standard Oil Company.—Well No. "M/W" 54, Sec. 26, T. 2 S., R. 11 W., S. B. B. and M., Whittier field. 8¼-inch casing recemented twice thru tubing. The first attempt, with 70 sacks of cement, failed, and the second attempt with 80 sacks, was successful.

Recementing Thru Perforated String

The operation of recementing thru perforations in the oil string of casing are in detail as follows:

1. The oil string is perforated near the shoe of the water string, preferably opposite a shale body of considerable thickness. The perforations thru which the cement is to be forced should be of a larger size than the ordinary perforations for oil production so that the cement may have ready egress thru the casing. In case the first recementing job is a failure, the casing, at the point where the cement is to be forced out, should be thoroly reperforated before making a second attempt at recementing.

2. The well is filled with screened sand from bottom, or is bridged at some point and filled with screened sand up to a point opposite the perforations and about ten feet below the point at which the cement is to be forced out. The reasons for either filling with screened sand from bottom, or from some point at a distance below the point at which cement is to be forced out, are as follows:

(a) The sand will fill the casing and perforations, thus preventing the cement from passing down on the outside of the casing and back into the well below a bridge which might be placed at the proposed cementing point.

(b) The sand will also tend to pass out thru the perforations and prevent the cement from passing on the outside of the casing, thus sealing off possible productive formations.

(c) This sand is easily cleaned out of the well after the recementing operation (being usually washed out with wash pipe), and thus does not permanently clog the perforations in the casing.

3. A cement cap, consisting of a sack or more of cement, may be placed on top of the sand bridge and allowed to set from 24 to 48 hours. This cement cap should seal the top of the bridge and also pass out against the walls of the well thru the perforations and tend to prevent the cement, later forced out thru the perforations, from passing downward on the outside of the casing.

4. The well is then tubed to about the top of the perforations and the tubing is packed off at the casinghead, which should have an outlet with valve attached.

5. If circulation cannot be obtained between the oil and water strings, the cementing operation is carried out the same as where casing is not altered.

6. If circulation can be obtained, between the oil and water strings, as is usually the case, it will also be necessary to pack off between these strings of casing, the water string being equipped with an outlet and valve below the packing gland. The outlet on the oil string is kept closed, the outlet on the water string is opened and cement pumped into the well thru the tubing until sufficient cement has been pumped out thru the perforations to reach up to the shoe of the water string.

7. The outlet on the water string is then closed and cement forced out, either until no more cement can be forced out under a predetermined maximum pressure, or until the desired amount of cement has been forced out.

8. The outlet to the oil strings is then opened and the excess cement washed out of the well.

Instances of successful cementing wells under such conditions are as follows:

Standard Oil Company

Well No. "M/C" 51, Sec. 17, T. 3 S., R. 10 W., S. B. B. and M., Coyote Hills.
Well No. "M/C" 52, Sec. 17, T. 3 S., R. 10 W., S. B. B. and M., Coyote Hills.
Well No. "M/C" 47, Sec. 20, T. 3 S., R. 10 W., S. B. B. and M., Coyote Hills.
Well No. "Huntington Beach" 1, Sec. 3, T. 6 S., R. 11 W., S. B. B. and M., Huntington Beach.

The operation of cementing a well either to plug off bottom water or to exclude water may not be considered as a recementing operation. It is, nevertheless, not generally considered as an original shut-off job, but as repair work, and is, therefore, considered here.

Plugging Off Bottom Water

The method of placing a cement plug in a well by pumping the cement in thru tubing is the same as that outlined for recementing a well without altering the casing.

Cement plugs have been sunccessfully placed thru tubing and under pressure when other methods have failed. This is particularly true where there is considerable gas action or where oil is entering the well from formations below the point at which the plug is to be placed. The reasons for the successful placing of the plugs by the tubing method, where other methods have failed, are probably as follows:

(a) The formations may be washed practically free from oil and mud before placing the cement, thus insuring that the cement will not be required to set in oil, but will make a firm bond with the formations exposed.

(b) The cement so placed may be held under sufficient pressure to prevent the entrance of oil, gas or water, to disturb the set of the cement.

The instances of placing plugs by the tubing method are so numerous as not to require special mention. Several companies operating in Los Angeles and Orange counties now use the tubing method almost exclusively in placing plugs either in repair or abandonment work.

The operation of cementing wells so as to exclude intermediate water and produce oil from above and below it is of recent origin, but has been used in several in-

stances by the Standard Oil Company in both the Whittier and Coyote Hills fields. The plan is now being tried out at the suggestion of the Mining Bureau by one of the smaller companies in the Montebello field. To date these operations have in several instances been successful in plugging off water from the production of the wells, but, at the same time, unfortunately, a considerable percentage of the oil production has been plugged off also. Further operations should furnish information which may indicate means of overcoming this serious drawback.

Since a large proportion of the deep oil fields of the state contain two or more oil zones, separated by intermediate water, the importance of this plan, if reasonably sure of success, can be appreciated.

The plan, in detail, can probably be best shown by reference to an ideal graphic log of an oil well which represents a well drilled into and producing from two oil zones, with a water zone intermediate.

An effective shut-off was secured by cementing the 8¼-inch casing at "F." The well was then completed and the 6¼-inch casing, perforated below "F," was landed as an oil string. The problem is to cement the intermediate water off so that it will not enter the production of the well, or flood the oil sands and at the same time allow the production of the well to be obtained from both zones.

The procedure in this case would be as follows:

1. Fill the well with screened sand from bottom up to point "A".

2. Place a cement cap by dump bailer, or by putting in cement in fibre or metal containers and breaking same with the tools, such cap to extend from "A" to "C".

3. Pack off between the oil and water strings.

4. Tube the well to "D" and wash thoroly.

5. Pump in sufficient cement to reach up to "B," pull the tubing up to that point, pack off between the tubing and the oil string and apply pressure. It is not advisable to put in more cement at this time, since the formations above "B" may take cement more readily than those below that point and the production from the upper oil zone be thus cemented off. As a natural consequence the operation may have to be repeated several times in order to pump out sufficient cement to seal the formations from "B" to "D".

6. The well should then be bailed for test to determine whether the shut-off at "B" was successful.

7. The well should then be cleaned out to "D" and tested. The cleaning out and testing may be performed in stages, or in one operation. This would largely depend on conditions: first, as to distance between "B" and "D"; second, as to the conditions as determined while drilling out the plug. For instance, if the plug was drilled out with cable tools with the use of only sufficient water for mixing the drillings, the test could be made as the plug was being cleaned out. If water does not enter, the hole may be cleaned out to "H" and again tested. If water is still excluded, the indications are that the job is a success and the well would be cleaned out to bottom and put to producing.

The possibilities of this method can be readily seen if conditions as to water and oil zones are known when the well is

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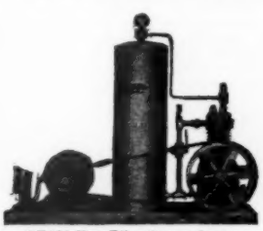

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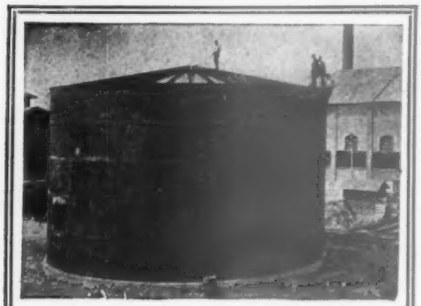

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drilled, in which case it might be possible to:

1. Cement a water string below top water at "F" and secure a shut-off.
2. Land a string of unperforated pipe on the bottom.
3. Perforate up to "D". One reason for perforating, by beginning at the lowest point, is on account of the danger of losing the tools when perforating below previously perforated pipe.
4. Fill with sand to "A", or bridge at some point below "A" and fill with sand to "A".
5. Place cement cap "A" to "C".
6. Tube to "D".
7. Pump out cement and secure a shut-off at that point, which could easily be demonstrated by cleaning out to "H" and testing.
8. Perforate "B" to "E" and secure second shut-off, in same manner as at "D".
9. This shut-off could only be tested either by reperforating with a long knife perforator, which would break the cement, near the top of the shale body at "B" and bailing for test, or by perforating opposite the first zone and bailing or pumping.
10. The well could then be cleaned out to bottom and produced from both oil zones, the intermediate water being shut off back of blank pipe cemented at "D" and "E".

London Coroner Warns Users Of Tank Barges

A recent inquest before Dr. E. K. Houchin, deputy coroner of East London (Eng.), over the bodies of seven out of eleven victims of an oil tank barge explosion on September 24, brought out several points of importance to tanker companies. The barge bore the name of the Anglo-American Company, Ltd. The tank which exploded was 45 feet long, 15 feet wide and 10 feet deep and rested on the bottom of the barge, unsecured. The barge was sent by Donald Miller & Company, who had the contract for repairs, to Hodge & Sons, with instructions to make the repairs contracted for. It was while the tank was being cut in two preparatory to being lifted out that the explosion occurred. The oxy-acetylene method was used in burning off the rivets. The conclusion reached was that some combustible residue had been left in the tank which generated vapor, causing the explosion. The main contention was whether the tank had been properly cleaned before being sent to the repair shop. The usual method of cleaning was to remove any residue and steam the inside.

This, the owners claim to have done, tho there was no subsequent inspection, nor were there written instructions to the repairers. Testimony went to show that steaming would expel any vapors which might remain in a tank, but would not remove any residue. There was no certification that the steaming had been perfect and all vapors removed. The deputy coroner cited all these omissions, but the jury brouht in a verdict of "Accidental Death," adding a rider to the effect that they wished to say that more precautions should be taken in the future handling of these barges.

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"I believe it is the process of the future."

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G. A. Burrell, *President* G. G. Oberfell, *Vice President*

Personnel Of Petroleum

By H. L. Wood

H. L. Wood

Business calls some men to the east whose ties are west, but vastly more men go west because of business than go east. After ten years of directing affairs of the Phoenix Refining Company and March Oil Company in Oklahoma from New York, J. King Duffy, their president, has just come to Tulsa, accompanied by Mrs. Duffy, to reside. As his acquaintance with petroleum widened Mr. Duffy came west oftener, until now it appears that western oil activities have forced his hand. The interests he represents operate a 4,000,-barrel refinery at Louisville, Ky.—the Aetna Refining Company—and Chestnut & Smith recently took over the Phoenix refinery at Sand Springs; but March Oil Company production remains to be expanded. For several years Mr. Duffy was president of the Export Oil Corporation, with extensive terminals near New Orleans, from which Mid-Continent products have been sent abroad some years. This corporation is now operated by Captain E. Constantin and E. E. Schock, and the exports are steadily increasing.

* * *

John A. Steel, of New York, accompanied by Mrs. Steel, is staying in Tulsa a few days. Fifteen years ago Mr. Steel went to Bartlesville from Pennsylvania and later became American manager for an English syndicate, operating as the Canadian Oil & Gas Company. With his brother, Gardner, Mr. Steel was fortunate enough to develop a fine lease in the Cushing field the sale of which enabled them to retire and return east. Gardner lives at Pittsburgh with his mother, having just returned from a trip to Europe. Mr. Steel has retained a little production near Keystone, and probably has an idea of increasing his interests in Oklahoma, being too young to make golf his steady business.

* * *

Some years ago John J. Moran of Boston became interested in leases in Oklahoma, several of which were partially developed, operated as the New England Oil Company. He arrived in Tulsa during the week and will attend the Osage Monte Carlo carnival at Pawhuska October 12. It's a pretty fierce game, but conservative Bostonians may have better batting eyes than temperamental westerners and enable him to line out a good lease.

* * *

John M. Landon returned from Minneapolis last week, where he had been in conference with the United States court relative to Kansas Natural Gas Company matters, he having been receiver for eight years. He expects to be discharged by November 1 at latest, when the last item of a long and tedious litigation will be written. Henry L. Doherty & Company acquired stock control of the Kansas Natural two years ago, but because of new complications over rates in Kansas and Missouri Mr. Landon as receiver has been the operating authority.

With his discharge the Doherty interest will probably take over operations in conjunction with the Wichita Natural Gas Company. Mr. Landon was for some years general superintendent of the Kansas Natural Gas Company under Jesse C. McDowell, therefore is naturally interested in watching the outcome of the prosecution instituted by the Doherty interests against Mr. McDowell.

* * *

John T. Barry, organizer of the Home Oil & Supply Company, Kansas City, was a busy attendant at the Denver convention of the I. O. M. A., as he was installing five new distributing stations in southeastern Colorado, two in northeastern Colorado, one at Albuquerque, N. M., and mallard ducks were so thick in western Nebraska he got cross-eyed trying to play them all. He was in Kansas City long enough to help entertain the New York and Chicago delegates, and they got even by electing him a director of the Independent Oil Men's Association.

After leaving the Sinclair Refining Company, in charge of its 300 distributing stations and of that company's installation at Denver, Mr. Barry started on his own power and selects the eastern slopes of the Rocky mountains for part of his business. When I first met John, about twenty years ago, he was traveling salesman for the Standard Oil Company in Kansas. Besides being one of the most popular men in refined petroleum trade circles, Mr. Barry is about as capable as any of them, and selecting him as a director was a tribute to his ability and levelheadedness.

* * *

W. B. Corlett made a decided hit at the Denver convention and got away with the title of colonel. His debut into marketing and refining circles was partly due to his son-in-law, Tom C. Moss, Dallas representative of the Acme Petroleum Company. Mr. Corlett has been in the land department of the Texas Company many years—with the Producers Oil Company, before its absorption—in Texas, latterly at Wichita as a backstop for John H. McMahon, division superintendent, and the idea of a vacation in the Rocky mountains must have been a shock when first broached—for W. B. belongs to the old school who used to look on vacations as a devilish contrivance to upset work. It has been my fortune to call upon Mr. Corlett many times in recent years when seeking confirmation of some unruly wildcat well way out in the uncharted spaces of north Texas and the Panhandle. What do you know about an old production and lease man flirting with a lot of fidgety marketers?

* * *

After spending the summer at Colorado Springs, John F. Fisher, of Tulsa, Mountain States Oil Company, came home during the week all set for active work, looking fine, hale and hearty, his friends will be glad to know. Two years ago the diagnosticians of Johns Hopkins, at Baltimore, told him he must eschew every form of physical and mental exertion, except golf, and he has followed the prescription fairly well, albeit he felt mighty lonesome at times. I'll say John Fisher looks now something like he used to when tearing around Louisiana bayous and lakes and Texas salt domes, and he ought to be able to cut out about half of that golf stuff he's been pulling for two years or so.

* * *

James Terry Duce, son of James Duce, state oil inspector of Colorado, is en route to South America to join the geological and field staff of the Texas Company, after fifteen months' employment in the Denver division. He is a graduate of the Colorado University.

* * *

John R. Hadley, of Tulsa—oil producer, lawyer and mentor—was in Denver last week on business. A brother connected with the Western Sugar Company resides there and another brother died there with the influenza in 1919, a Western Sugar Company superintendent. Mr. Hadley has been much interested in the success of the association formed by the purchasing agents of Mid-Continent oil companies, and attended a meeting of the association in Denver.

When the Cushing field was discovered Mr. Hadley was practicing law at Cushing and was fortunate enough to lease a schoolhouse lot on the eastern edge of the field. The well, while not a gusher, has been a consistent producer and made some money. When the Beggs pool was discovered Mr. Hadley dug up and leased a long strip that had been overlooked. His first well made 600 barrels, and three others have been drilled. Having a judicial temperament, Mr. Hadley has never been obsessed with the craze for millions, therefore has been satisfied with average life and the interest attaching to oil-field activities on the slow pulley. During his stay in Denver Mr. Hadley visited Herbert S. Hadley, at Boulder, Colo., a former governor of Missouri, now law professor in Colorado University and attorney for one or two corporations. The ex-governor may be a sort of cousin to John R., and they have been friends for years. Herbert S. Hadley's lungs, from too much Republican oratorical effort, or too much Missouri miasma, seemed affected and he settled in the mile-high air

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of Boulder. Or, perhaps, he might have given them a wrench during the six months he lived in the tainted air of New York while trying to circumscribe the monopolistic tendencies of old and young John D. Rockefeller. Anyway, he was able to talk to the Independent oil men at Denver and John R. had a pleasant visit with him.

* * *

R. A. Wotowitch, Crew Levick Company, Philadelphia, after attending the Denver convention, is circulating in western territory wherever the Empire Refineries, Inc., have refineries, even to the Pacific slope. The Crew Levick Company is domestic and export distributor for Empire petroleum products, and Dick is making a careful check on the source of supplies.

British Government Has $25,413,376 In Oil Shares

The British government has invested $87,397,000 (at normal exchange) in various industrial concerns dealing in oils, cellulose, sugar, dyes, nickel, ships, etc. An official return has just been issued showing the amount of capital invested in each of the different companies in which the government has taken stock, but the return definitely excludes "advances in connection with contracts secured on short-term mortgages or debentures." The largest investments are in the near east—in the Anglo-Persian Oil Company and the Suez Canal shares.

The various items in the return include: Anglo-Persian Oil Company, $25,305,800; Suez Canal shares, $19,709,325; Turkish Petroleum Company, $107,575; Cunard Steamship Company, $12,653,000; Standard Shipbuilding & Engineering Company, Edward Finch & Company (1916), and the Chepstow Pty. Company, $3,193,640; British Dyestuffs Corporation, $8,273,055; British Cellulose & Chemical Manufacturing Company, $7,056,425.

Great Southern Co. Will Enlarge Plant

By Special Correspondent

LEXINGTON, KY., Oct. 15.—The Great Southern Refining Company has begun work on a $100,000 addition to its plant on the Leestown pike, near the Lexington city limits, J. E. Shatford, general manager of the company, announced. The addition will consist of a complete plant for the refining of filtered cylinder stocks. A two-story brick building 140x40 feet will be built and equipped with filtering machinery that will enable the company to turn out the highest grade of bright stock. One hundred men will start on the structural work this week.

Roger Petroleum Company, of Kansas City, has announced its recent incorporation under the laws of Missouri. It is purely a marketing concern, with offices at 422 Dwight building, Kansas City. W. R. Phelps, president and general manager of the new concern, was formerly with the Harvey Crude Oil Company.

Tanker, Veteran Of War, Still Carries Fuel Oil For British Admiralty

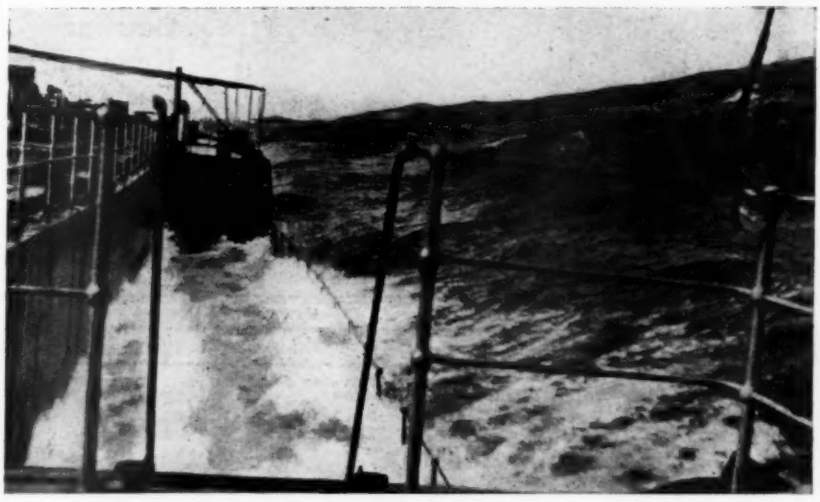
Staff Special

TULSA, Oct. 7.—A. E. Landsittel, secretary of the Export Oil Corporation, recently received the accompanying pictures from London from Chief Officer Charles Watler, of the S. S. Kennebec, which recently took on a cargo of 2,400,000 gallons of fuel oil for the British admiralty at the Avondale, La., terminal of the Export Oil Corporation.

The Kennebec was built by the British admiralty during the war, and was known as the War Mogul, while owned by the British government. The Anglo-American Oil Company, Ltd., purchased this vessel from the admiralty in March, 1918, and renamed it the Kennebec.

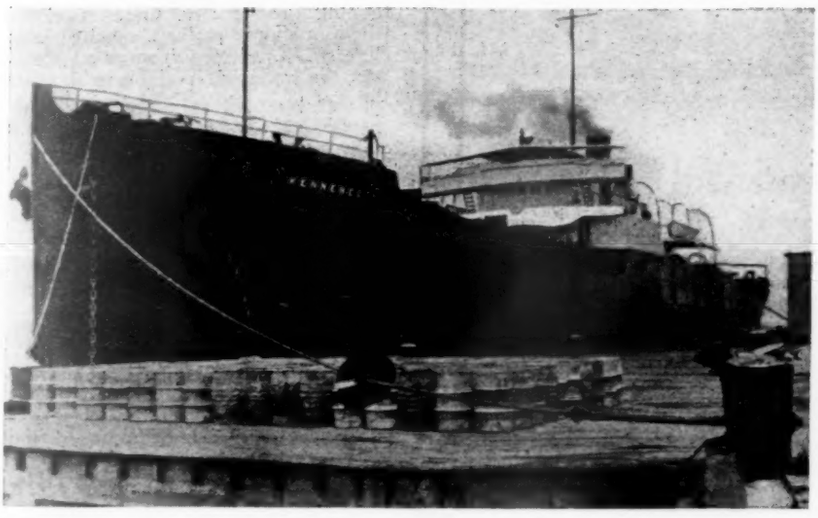
The Kennebec is 400 feet in length, 52 feet in breadth, and 30 feet deep, with five tanks which carry 7,500 tons of bulk oil, also two cargo holds for transportation of oils in cases or barrels. The total cargo capacity is 8,400 tons. It is equipped with fuel oil burning apparatus and has an average speed of 11.5 knots per hour.

The complement of the Kennebec is 37 officers and men with excellent quarters provided for both officers and crew. All of the members of the Kennebec's crew had thrilling experiences aboard tankers during the war, the first mate having been torpedoed twice.



The Kennebec shipping a big sea in a strong blow.

First Mate C. Watler, Secretary A. E. Landsittel of the Export Oil Corporation, Captain J. MacKenzie, Chief Engineer J. Smith, and Second Mate J. Harrison, in order from left to right



The Kennebec, taking cargo at Export Oil Corporation dock

Tanker Badly Damaged By Explosion Of Gas

NEW YORK, Oct. 14.—British tanker G. R. Crowe was seriously damaged by explosion of vapors in her forward tank at about 2 o'clock in the afternoon of Thursday, October 7. She was owned by the Montezuma Transportation Company, of Toronto, and is under charter to the Warner-Quinlan Asphalt Company. The Tanker had reached port from Palo Blanco, Mexico (near Tampico), more than a week before, bringing 27,000 barrels of Mexican crude to the asphalt company. She had been unloaded and was undergoing repairs in the shipyards of James S. Shewan & Sons, Inc., at 27th street, South Brooklyn.

Five men were killed and 40 injured more or less seriously by the explosion. The estimated damage done to the vessel has not been made public. Newspaper reports stated a 400-pound section of the Crowe's steering gear was hurled clear of the boat, and a three-ton spare propeller which was on deck above the explosion. Six large steamships lying nearby were endangered but did not suffer. Assistant District Attorney Ruben Wilson, of Kings county, issued a statement at the close of an investigation that the explosion was a result of a workman's negligence.

It was his opinion that a spark had dropped into the lower compartments of the ship and ignited the gas accumulated there. There was a crew of 300 men on board. Preparatory to having her forward hold relined, the empty compartments had been steamed in what was considered a thoro manner to prevent the accumulation of vapors. However, it is said that work had not started on the job in the hold, and therefore the compartments had not been thoroly examined. This is done customarily before workmen are permitted to enter spaces previously containing oil. The men on board were moving some objects on deck. The explanation is advanced as plausible that one of the men dropped a cigar stump or allowed a spark from an acetylene torch to fall into the empty hold.

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Refiners Oppose Price Decline Guarantee

By Special Correspondent

WASHINGTON, Oct. 14.—From the petroleum man's point of view the trade practice submittal of the Federal Trade Commission, on the guarantee against price decline proposition, held on October 5 and the two following days, was not much of an event. Only three representatives of the industry were present. So many other trades were bursting with views on the subject, so many of them had grievances to air that the petroleum men had not the heart to ask for time in which to talk.

The three attending the conference are: John W. Liberton, lubricating sales manager for the Atlantic Refining Company; Secretary John D. Reynolds, of the American Independent Petroleum Association, and Fayette B. Dow, Washington representative of the National Petroleum Association, the Western Petroleum Refiners and the American Petroleum Institute. Mr. Dow submitted a short written memorandum setting forth the views of the associations so far as disclosed by the answers returned by members to the questionnaire sent out.

In a broad way the answers indicate that the refiners, in so far as they are represented in the membership of the associations, do not make guarantees against declines in prices, because, without a corresponding protection in case of market advances, it is a one-sided thing, lacking that mutuality which the law presumes is the evidence of a fair bargain. Some contracts provide for prices on products, when sold, up or down, according to the fluctuation of crude. That, however, is not a guarantee against decline. It is a provision for adjusting the price of products, at the time of sale to the customer, to the price of crude, the raw material.

Mr. Liberton opposed guarantee against a falling market on kerosene and gasoline, but not on lubricating oils, because the latter move more slowly.

The preponderating view of the conference was that guarantee against price decline is bad business, if not really in violation of the law against unfair practices because it tends to prolong the period of relatively high prices. The silk people, in particular, made the point that a guarantee, if made on silk, would have prolonged war prices indefinitely and put off the big drop in the price of raw silk, which, a short time ago, resulted in a decline of 70 per cent from what they said was the artificial level brought about by the war.

Shreveport P. & R. Asks Stock Permit

SHREVEPORT, LA., Oct. 15.—Application of the Shreveport Producing and Refining Corporation for a permit to sell approximately $20,000 worth of stock, has been receiving attention of the Louisiana Securities Commission, according to advices from New Orleans, where the commission has its headquarters, and altho no official announcement has been made, awaiting issuance of a statement upon completion by the hearings, the advices say "it is understood the permit will be granted."

Bills Of Lading Need Rubber Stamp Clause

Styles have changed for bills of lading. Clifford Thorne, cammerce counsel of the Western Petroleum Refiners' Association, has forwarded to the members of the association the following quotation from a recent issue of the Daily Traffic World:

"It is announced that both shippers and carriers may use up their present stock of bill-of-lading forms, after the new form prescribed in Supplement 9 to Consolidated Classification No. 1 becomes effective on October 10, if the following is stamped across the face:

"——The conditions of this bill of lading are amended by Supplement No. 9 to Consolidated Classification No. 1, effective October 10, 1920, or subsequent reissue thereof, as filed with the Interstate Commerce Commission and state commissions, and to the extent to which they are inconsistent with such amendments they are superseded thereby——"

"It will be recalled, of course, that the Interstate Commerce Commission has the bill of lading matter before it, and as it may prescribe forms that may be different from those provided in Supplement 9, it doubtless will be deemed prudent upon the part of all concerned to order minimum instead of maximum quantities of the new bills."

Border Restrictions Follow Fever Report

By Special Correspondent

TAMPICO, MEXICO, Oct. 10.—The American consul at Laredo, Texas, has received orders from Washington to refuse entry of travelers from Tampico, Tuxpam, Vera Cruz and other points which are considered to be infested with fellow fever until six days from date of departure from the locality. He has been further ordered to accept reasonable evidence of residence in high altitudes in Mexico or in other localities definitely known to be free from yellow fever for six days subsequent to departure from fever-infested points. This order does not apply to those traveling by boat.

There are no positively known cases of yellow fever in Tampico at the present time, according to government officials who are here to prevent the spread of the disease from Tuxpam and the lower country.

Thousands of dollars have been provided by the oil companies located in the Tampico district to keep the fever out of this port. The sanitary commission which was appointed a week ago reports that Tampico will be thoroly cleaned up within the next two weeks and members of the commission have expressed the belief that Tampico will not face an epidemic such as is raging in the Tuxpam zone.

According to "Engeneria Italiana," traces of hydrocarbon deposits have been encountered in artesian wells sunk near the former agricultural school in Tripoli which raise hopes of the presence of petroleum.

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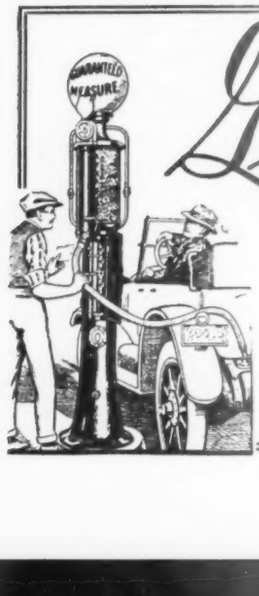

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To Announce Methods For Lessening Waste

By Special Correspondent

WASHINGTON, Oct. 15.—In a short time the Bureau of Mines is going to make public things that may be done by producers and refiners to save about half the gasoline that is now lost in evaporation. J. O. Lewis, petroleum technologist of the bureau, in the speech at the Denver convention which he did not expect to make, reserved conservation as the last of the methods proposed by him for increasing the reserve of petroleum products against the time when the United States might be facing a most serious situation, providing the discoveries of new sources of supply are no greater than geologists have reason to expect.

The bureau is going to found its recommendations for conservation measures on the proposition that the preventable losses, by evaporation of gasoline from the crude, from the time it leaves the wells until it reaches the refinery, is 300,000,000 gallons annually, or enough to supply 1,200,000 automobiles each using on an average 250 gallons a year.

This loss the bureau will contend, is a preventable loss and is wholly distinct from losses other than by evaporation from the crude on its journey from the well to the refinery. The total loss the bureau calculates at 600,000,000 gallons, but half of it cannot be prevented. The gasoline that is lost is the most volatile, and, according to the generally accepted idea, it is the best of the gasoline on account of its high volatile character, altho there may be some dispute as to whether, if it is saved it will prove itself to be so fine. Naturally a high value in money is placed on the loss of 600,000,000 gallons, the estimate being $150,000,000, or 25 cents a gallon.

A forthcoming bulletin it is claimed, will show half the loss of 600,000,00 gallons can be prevented. The fundamental assumption is that there has been no change, worth mentioning, in the method of storage and handling since the time when gasoline was the curse of the oil industry and anything that would get rid of it was regarded as a blessing, not in disguise, but one easily recognized and welcomed.

Red or black paint on tanks, for instance, is regarded by the bureau as a promoter of evaporation, while white paint is regarded as the best covering that can be used to prevent some of the evaporation. None of the methods for preventing losses of that kind have been mentioned in the advance notices of the bulletin given out by the bureau. The main object now is to create an interest in the fact that there is a great preventable loss. The industry knows it, and units in it have done some prevention work, but it is the theory of the bureau that much more can and should be done, hence its collection of theories and facts covering that subject.

Mr. Lewis, in his statement on these losses, says: "At a time when there exists so much apprehension in regard to the gasoline situation, it is comforting to learn of any ways in which the supply may be increased. In an intensive effort to find ways of increasing and improving the quality of gasoline, the Bureau of Mines has made an investigation of the losses of gasoline by evaporation from the crude oil in the field. Extensive experiments and investigations in the principal

fields have disclosed that a great quantity of the gasoline now escapes into the air. This can be conservatively estmated at about 20 per cent of the gasoline in the crude oil. Furthermore, probably half of this, can be economically recovered, and this quantity will not only increase our supply but improve its quality somewhat.

"From the time that the crude oil reaches the surface of the ground at the well, the oil passes thru a series of tanks and pipe lines until it reaches the refinery, sometimes hundreds of miles away. In the course of its journey the oil is exposed to sun and air, and the gasoline, being very volatile, vaporizes and escapes into the atmosphere. Altho it has been generally known that such losses occur, no one, up to the present time has called attention to their magnitude."

In the October 6 issue of **National Petroleum News**, the speech which Mr. Lewis delivered in Denver before the Independent Oil Men's Association was printed. It does not deal wholly with the subject of conservation as it relates to evaporation from crude oil between the well and the refinery, but points out the importance of effecting maximum recovery from every producing well and expresses hope that fields now thought to be exhausted may produce in commercial quantities again.

Double Crude Capacity Of Kentucky Refinery

The Petroleum Refining Company, of Latonia, Ky., which is in the Cincinnati district, is a little more than doubling the capacity of its refinery. The new work will be finished about December 1, according to Harry L. Deming, general manager. Mr. Deming was formerly with a number of refiners in the Mid-Continent field, and has been the head of this refinery for the past year.

The company's capacity has been 24,000 barrels of crude a month and it is running to capacity. This is now being increased to 55,000 barrels a month and the company has arranged for the necessary additional crude. Three new 600-barrel stills are being put in, a 1,000-barrel agitator and about 50,000 barrels of steel tankage.

The company is distributing its products to a few jobbers locally, and its fuel oil to a comparatively few nearby manufacturing concerns.

A recent description of the system adopted by Hugh Allan, general manager of the Burma Oil Company, for fractionating petroleum states that the oils are vaporized by the ordinary Henderson still, but instead of being subsequently re-distilled, or in place of being collected by means of a column, Mr. Allan blows his vapors into a series of vertical pipes, in which he gets the same kind of a product which Lennard had obtained in his tar still; that is to say, there is a fractional condensation from member to member, the latent heat of the high boiling components being used to re-evaporate any condensed volatile oil. The net result is that one obtained any fractions desired.

In the mountainous districts of Bavaria it is proposed to exploit the oil shales, which are said to yield 6 per cent oil.

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REFINERY-TANK WAGON MARKETS

Some Mid-Continent Plants Close

CLOSING down of several refineries in the Mid-Continent and curtailment of operations by many others was the outstanding feature in a week which saw a continuation of the downward tendency of prices prevailing during the past few weeks on practically all refined products. The reduced activity in the refining industry is responsive to two facts. First, the demand for refined products is at a low ebb, due to general industrial and personal retrenchments. This condition means that the limited storage of the smaller plants quickly becomes filled and makes it impossible to operate.

Credit Situation Influential

The second factor is the policy of restricted credits which is being steadfastly adhered to by the Federal Reserve Board despite the complaints of many lines of industry. How long conditions will remain such as to keep some of the smaller plants, less efficiently managed and financed, from operating profitably, the best versed students of marketing can only guess.

Small Interests Must Sell

Upon one thing, however, the better posted refiners are generally agreed. That is, that the closing of the above-montioned plants will tend to stabilize conditions and to some extent relieve the over supply of refined products. It is known to be the smaller refiners who are responsible largely for breaking the market when a time of stress comes. With their small storage capacity and their frequently uncertain financial arrangements, they are forced to throw their products on the market for what they can get, often underbidding the larger refiners for the purpose of getting some immediate cash in hand.

The same condition of the market that prevails in the Mid-Continent field is present in the other refining centers except that it is not sufficiently aggravated to compel the closing down of refineries. Products are moving very slowly from the north Texas refining centers as well as from the western Pennsylvania plants.

Depression Cannot Endure

While the present slump in the demand for petroleum products leads to the belief in many quarters that cuts in the posted price of crude are coming, the present situation is universally known to be only temporary and due to the deflation program thru which the country is being put. It is a certainty that, broadly viewed, the American crude supply is in coming months and years destined to fall farther and farther short of meeting the demand for gasoline.

Hope Seen in Mexico

Considered from this standpoint, one of the most encouraging events in months, if not years, as an augury of future crude supplies, is the bringing in of a producing well by the Huasteca Petroleum Company (Doheny) in the Zacamixtle district of Mexico. This well is said to prove an important territory which promises to produce enormous quantities of needed crude in the future and also justifies the investments that have been made by many companies in this region before a show of oil was developed.

Gasoline And Fuel Oil Lower; Kerosene Steady

Staff Special

TULSA, Oct. 18.—Students of marketing conditions in the Mid-Continent field see in the number of small plants now shutting down the only remedy for the condition of refined products, obtaining in this territory at present time.

They point out in this connection, that it is invariably the small refiner with but limited storage that precipitates a wave of price cutting which, tho giving a temporary advantage over the large refiners, inevitably leads to a general reduction without increasing the volume of refined products moving.

While Oklahoma refiners have suffered in the past several weeks thru the price-cuting prevalent in north Texas, this situation seems to be clearing itself up somewhat. Its effect, however, is still felt by Oklahoma-Kansas refiners, particularly in gasoline, which has been offered freely at 19 to 19½ cents, north Texas common points, which would bring it into Group 3 territory, a cent under the price asked by Mid-Continent plants. Jobbers, anticipating a further decline in light oils, are limiting their purchases to their immediate requirements.

Kerosene, while stationary, at last week's price levels is showing a somewhat healthier tone, as it is not being adversely affected by the north Texas situation as cited above.

Fuel oil, which was considered by many to have reached the bottom, shows a further slight weakening in price which may be charged to a further curtailment in industrial plants. Marketers of the more farseeing type are decidedly pessimistic as to the demand for fuel oil from this source. Larger refiners marketing a higher quality product than the average heavy oil of the small skimming plant are, however, getting a much better price than the spot market would indicate, one larger company having moved five train loads at $2.65 per barrel.

Slowing Demand Adds Softness To Market

By Special Correspondence

PITTSBURGH, Oct. 18. — Further recessions of price, as a result of slowing demand, marked the course of the market for practically all products during the past week at the western Pennsylvania refineries. Those products suffering most were the cylinder stocks, the napthas and gasoline which latter lost from a quarter to half a cent from the prices prevailing a week ago.

Fuel oil, which has been very weak for the past month or so, showed a tendency toward stiffening. Demand is reported picking up to some extent,

Refinery Markets, All Products

Pennsylvania, Oklahoma, North and South Texas

FOLLOWING are the average market prices on the more important petroleum products in cents per gallon f. o. b. refinery in Oklahoma, Texas and Pennsylvania. These are actual prices at which the bulk of each product is moving from the refineries at the present time. Anyone having knowledge of different prices which have obtained on any considerable quantity of any of the products mentioned will greatly favor us by advising us at once.

GASOLINE AND NAPTHAS

	Prices	Prices	Prices
Pennsylvania	**Oct 18**	**Oct. 11**	**Sept. 20**
54 Naptha	23½	23½-24	25
56 Naptha	24	24½-24¾	25¾-25½
58 Naptha	24½	24½-24¾	25¾-26
60 Straight-run gasoline	25	25 -25½	26½-26¾
62 Straight-run gasoline	25½	26	27
64 Straight-run gasoline	26	26½-27	28
68 Straight-run gasoline	28	28½-28¾	29
68-70 Blend, 460 end point	23½-24	23½-24	24¾-25
60-62 Blend, 450 end point	23½-24	23½-24	24¾-25
62-64 Blend, 450 end point	23½-24	23½-24	24¾-25
66-68 Blend, 440 end point	23½-24	23½-24	24¾-25
60-70 Blend, 440 end point	23½-24	23½-24	25¼
68-70 Blend, 420 end point	23½-24	23½-24	25
Oklahoma			
50-52, 450 end point	19 -19½	20 - 0½	21 -21½
56-58, 450 end point	20 -20½	20½-21	22 -22¼
58-60, 430-440 end point	20¼-21	21¼-21½	22¾-23
60-62, 400 end point	22¼-22¾	23 -23½	24 -24½
62-64, 375 end point	23¼-23¾	23½-24	25 -25½
64-66, 365 end point	24¼-24¾	24¾-25	26 -26¼
58-60, 140 i. b. p.-428 end point	20¾-21¼	21¾-22	23¼-23½
80-84 Raw Casinghead	20 -21	20 -21	21 -22
68-70 Blend, 430-435 end point	20 -20½	20 -20½	22 -22¼
66-68 Blend, 450 end point	20 -20½	20 -20½	21¾-22
60-62 Blend, 450 end point	19¾-20¼	20 -20½	21½-22
58-60 Blend, 440-450 end point	19¾-20¼	20 -20½	22½-22
74-76 Absorption Gasoline	23 -23½	22 -22½	21½-22
North Texas			
52-54, 460-470 end point naptha	18 -18½	18¾-19¼	20½-20½
54-56, 450-460 end point naptha	18½-19	19 -19½	20½-21
56-58, 450 end point gasoline	18¾-19¼	19 -19½	21½-22
58-60, 440 end point gasoline	19 -19½	19¼-19¾	21¾-22¼
60-62, 400 end point gasoline	23 -23½	23 -23½	24 -24½
64-66, 360-375 end point gasoline	23¼-23¾	23½-24	25 -25½
New Navy Specification gasoline	19¼-19¾	19½-20	22 -22½

BURNING OILS

Pennsylvania			
45 Prime White	13¼	13¼	13¼-13
46 Water White	14-14¼	14	14
47 Water White	15	14½-15	14¾
300 Burning Oil	14¼-15	14¾-15	14¾
Oklahoma			
42-43	9 - 9½	9¼- 9½	9¾-10¼
44-46	14 -15	15 -15½	16 -17
42-43 Distillate	8¾- 9¼	9 - 9¼	9½- 9¾
North Texas			
40-41 Prime White distillate	8½- 9	8¾- 9¼	8½- 9
40-43 Prime White kerosene	8¾- 9¼	9 - 9½	9 - 9½
42-43 Water White kerosene	9 - 9½	9¼- 9¾	9½-10

NEUTRAL OILS

	Prices	Prices	Prices
Pennsylvania	**Oct. 18**	**Oct. 11**	**Sept. 20**
200 Vis. No. 3 Assoc. Filt	31 -32	31 -32	35
180 Vis. No. 3 Assoc. Filt	29 -30	29 -30	32
150 Vis. No. 3 Assoc. Filt	25	25	28
Oklahoma (Vis. test 70)			
100 Vis. No. 2 Color	14 -15	14 -15	16 -17
200 Vis. No. 3 Color	23½-25	24 -25	26 -27
160 Vis. No. 4 Color	22 -22½	22½-23½	23 -24
200 Vis. No. 4 Color	23 -24	23 -24	25¼-25¾
200 Vis. No. 5 Color	23½	22½-23	25 -25½
South Texas (Vis. test 100; cold test 0)			
70 Vis. No. 2 Color Unfilt. Pale	16 -17	16 -17	16 -17
100 Vis. No. 2 Color Unfilt. Pale	17 -18	17¼-18	17¼-18
150 Vis. No. 2½ Color Unfilt. Pale	22½-24	23 -24	23 -24
200 Vis. No. 3 Color Unfilt. Pale	27 -31½	27 -31½	28¼-31½
300 Vis. No. 3 Color Unfilt. Pale	32 -34½	32 -34½	34 -35½
500 Vis. No. 3½ Color Unfilt. Pale	40 -42½	40 -42½	42 -43
750 Vis. No. 4 Color Unfilt. Pale	50 -53¼	50 -53¼	51½-53¾
70 Vis. No. 1½ Color Filt. Pale	22¾	22¾	22¾
100 Vis. No. 1½ Color Filt. Pale	28½	28½	28½
150 Vis. No. 1½ Color Filt. Pale	32½	32½	32½
200 Vis. No. 2 Color Filt. Pale	37¾	37¾	37¾
300 Vis. No. 2 Color Filt. Pale	42¼	42¼	42½
500 Vis. No. 2½ Color Filt. Pale	47¾	47¾	47¾
750 Vis. No. 2½ Color Filt. Pale	58	58	58
200 Vis. No. 5½ Color Red Oil	26 -27¾	26 -27¾	26 -27¾
300 Vis. No. 5½ Color Red Oil	31 -33	31 -33	32 -33
500 Vis. No. 6 Color Red Oil	37½-39	38½-39	38½-39

CYLINDER STOCKS

Pennsylvania			
600 Steam Refined	32 -33	34	38
635 Steam Refined	40 -42	40 -42	52
650 Steam Refined	43	48	54
600 Flash	60	58 -61	58
600 Amber Filtered	54	54	58
600 Medium Filtered (D)	63 -64	63 -64	57
Cold Test Stocks (bright filtered)	84	85	90
Cold Test Stocks (dark filtered)	82	83	86

WAX

Pennsylvania			
122-124 White Crude Scale Wax, N. Y., lb.	8	8	8½- 8¾
124-126 White Crude Scale Wax, N. Y., lb.	8½	8½	9
Oklahoma			
122-124 White Crude Scale Wax	7½- 7¾	7½- 7¾	8 - 8½

FUEL OIL

Pennsylvania			
36-40 Fuel Oil	11 -11½	11	12
Oklahoma			
32-36 Gas Oil (gal.)	6½- 7	6¾- 7	7¾- 8
24-26 Fuel Oil (bbl.)	$2.35-$2.40	$2.50-$2.60	$2.70-$2.80
Fuel Oil, buyers' cars (bbl.)	$2.25-$2.35	$2.35-$2.45	$2.50-$2.60
North Texas			
32-36 Gas Oil (gal.)	6¾-7	7 -7¼	7¾- 8
24-26 Fuel, per bbl	$2.50-$2.60	$2.60-$2.70	$2.80-$2.90
26-28 Fuel, per bbl	$2.60-$2.70	$2.70-$2.80	$2.90-$3.00
South Texas			
South Texas fuel per bbl	$2.90-$3.00	$3.15-$3.25	$3.25

and whereas a week ago the bulk of the fuel oil was moving at not to exceed 11 cents, at this time a considerable amount is leaving some of the plants at as high as half a cent more.

Whether the firming of fuel oil is due to an upward curve in industrial activity generally, or whether it merely indicates the shutting off of natural gas as industrial fuel is not certain, altho it is generally believed to be due to the latter cause rather than the former.

Kerosene remains firm, the seasonable requirements operating to keep the demand about equal to the outturn in the experience of most of the refiners. Wax remains weak, being quoted at 8 cents New York for the 122-124 melting point. Wax depends almost entirely upon foreign demand for a strong market and shipments abroad are now almost at a standstill.

The neutrals showed little change over the prices of a week ago, altho the tendency was slightly downward.

North Texas Market Is Still Declining

Staff Special

HOUSTON, TEX., Oct. 18.—Naptha and gasoline are still on decline in north Texas. There seems to be slightly better demand than a week ago but not heavy enough to take care of surplus product being manufactured. Various unfounded rumors are prevalent regarding purchases made and prices at which gasoline is being quoted. Had the majority been true there would have been purchased in north Texas in the past week nearly 2,000 cars ranging from 18 to 19 cents sellers' cars.

The actual condition is this: That exclusive of sales to jobbers thruout the country, there have not been more than 500 cars sold at prices around 19 cents. While sales to jobbers are about normal, markets are showing the effect of lack of large purchases such as made by exporting and Standard interest. With straight run gasoline overstocked and prices declining naturally the demand for blended stuff is not very brisk. This is resulting in many blenders reducing their output to the lowest possible level. For that reason demand for naptha is correspondingly low. Owing to substantial purchases covering the remainder of the year having been made, thirty to sixty days ago, in which many north Texas refiners participated, the kerosene market does not show the slump that gasoline does. Kerosene prices are about the same as last week with little prospects of change either way. There is enough kerosene being manufactured to take care of the large August and September sales and still leave a healthy surplus for jobbing trade.

Contrary to almost universal expectations export markets are still dormant. About the only request for export is in cases and no north Texas refiners are prepared for this sort of shipments. There is a little high gravity gasoline moving in bulk for export, but with that exception none of the three exporters in this field are making any purchases of gasoline or kerosene and they do not appear to know when they will be able to do so.

Fuel oil and gas oil are even weaker than they were last week, with the demand continuing light. Everyone expects, however, that fuel and gas oil markets will begin to look up by early November, as coal will begin to be diverted soon to domestic consumers and many commercial buyers will begin to depend upon fuel oil instead of coal.

Gas plants which use large quantities of gas oil during winter months are beginning to increase production and that will take care of the gas oil situation in good shape.

Expect Stronger Fuel Oil As Miners Strike

Staff Special

TULSA, Oct. 18.—The walk-out of 2,800 coal miners in the McAlester district is expected by many refiners to strengthen the demand for fuel oil. While the miners term the walk-out a "vacation," it has resulted in all of the mines at Hartshorne, Krebs, Gowen, Alderson, Brewer, Camoria and Bach being shut down. Disagreement over wage matters is attributed as the cause of idleness, and executives of the union are endeavoring to get the miners to return to work.

According to operators in Tulsa, there is no underground coal in storage at the mine and, therefore, operators are unable to fill orders.

It is too early yet to forecast the effect of this tie-up on the fuel oil market, but an extended "vacation" will undoubtedly result in an increase in the market price of this product, which has been decidedly soft.

Expect Lubs To Hold Firm On Gulf Coast

Staff Special

HOUSTON, Oct. 18. — With the ratio of crude oil and lubricating oil prices generally recognized to be in order, particularly when the depletion of fields yielding a grade of crude containing a large content of lubricant continues, the tendency in south Texas refinery circles is to expect a continuation of prices at approximately their present levels.

Any long continuance of the British coal strike is expected, in the southwest, to affect fuel oil thru diversion of Atlantic seaboard shipments of Mexican fuel to Great Britain, and a consequent greater call upon domestic supply. A further weakening, however, has resulted in the last week and spot sales in south Texas do not exceed a price of $3 a barrel.

Societe de Napthe Limanova, with 100,000,000 francs (normal, $5,000,000) capital, has been formed to engage in the transport from Poland to Czecho-Slovak refineries of petroleum acquired at reduced prices. On their part, the refineries will deliver to Poland one-half of the refined products obtained from the oil supplied.

Price Of Gasoline Had No War-Time Inflation

NEW YORK, Oct. 18.—Gasoline has advanced less in price since 1913 than any other basic commodity, according to statistics recently tabulated by Mark L. Requa, vice president of the Sinclair Oil Corporation, who during the war was head of the oil division of the United States Fuel Administration.

The fact gasoline has risen far less than practically all other merchandise is not popularly appreciated, Mr. Requa says. In substantiation of his contenton, he has arranged some comparative data on the price trend of some of these materials with the tank wagon prices of gasoline in New York and Chicago.

The result of research shows that the per centage advance in the wholesale price of gasoline in the two chief cities of the country has been as follows:

	New York	Chicago
During the war	2 p. c.	12 p. c.
Since armistice	23 p. c.	13 p. c.
Total advance	78 p. c.	75 p. c.

Percentage increase in the wholesale prices of other commodities during the same period, including parts of 1913 and 1920, and the intermediate years is shown as follows:

	During War	Since Armistice	Total Advance
Clothing	51 p. c.	31 p. c.	235 p. c.
Building Mat..	44 p. c.	103 p. c.	237 p. c.
Farm Prod. ..	22 p. c.	10 p. c.	143 p. c.
Food	13 p. c.	35 p. c.	179 p. c.
All Commodities	20 p. c.	25 p. c.	169 p. c.

The data dealing with gasoline has been compiled from market quotations. The figures on other commodities were obtained from the United States Burcau of Statistics. It will be observed from these comparisons, taking the price of gasoline in New York and Chicago as typical of the entire country, that from 1913 to the present time gasoline has advanced in price less than half as much as all commodities proportionately.

During the period of our participation in the war, when the petroleum industry was under voluntary price regulation, the increase in price of gasoline was insignificant both in actual price advance as well as relative to the price increases of commodities in general. As a matter of fact, the price of gasoline has not risen proportionately with other commodities and there is, therefore, not to be expected the same recession on price if based solely upon price. Taking into consideration the condition of the oil industry and the abnormally rapid rate of increase of consumption any expectation of material decline in price would seem to be based upon the inadequate knowledge of the facts.

English Firm Brings Suit Against Cosden

Staff Special

TULSA, Oct. 15.—The Mason Spirit Distributing Company of London, England, is asking $1,000,000 damages in a suit filed here yesterday against J. S. Cosden and Cosden & Company.

The English company alleges that a contract was entered into by Cosden

& Company, on February 5, 1915, whereby it agreed to deliver 10,000,000 gallons of gasoline in consignments of 2,000,000 gallons, and has failed to do so.

The damages sought are to cover profits on the contract which the Mason Company claims it would have made, had Cosden & Company made delivery.

According to E. R. Perry, vice president of Cosden & Company, no contract was actually entered into with the Mason Spirit Distributing Company, but the matter was discussed in New York, in 1915, by J. S. Cosden and a representative of the English company.

Export Figures Refute Gasoline Accusation

By Special Correspondent

LOS ANGELES, Oct. 14.—Oil products constituted 50 per cent of the grand aggregate of the exports of the southern California customs district for the fiscal year ending June 30, 1920. The total value of all exports was $19,876,830, the value of oil $9,797,669.

Standing out, however, in bold relief, is the fact that exports of gasoline, about which the local representative of the Department of Justice has been hinting to the daily press all sorts of dark and dire things, were utterly insignificant. For the entire twelve months they were scarcely 10 per cent of one day's peak load consumption.

The exports of gasoline constituted only 3-10 of 1 per cent of the total quantity of oil exports and 2.5 per cent of their value. The total was 246,282 gallons, valued at $80,185. From San Francisco such exports were larger.

The exports of fuel and gas oil were 668,851 barrels, value $1,136,676—33 per cent of the total quantity of oil shipped, and 11.5 per cent of the value thereof. The outstanding fact is that such exports are decreasing, not increasing, and the decrease is the result not of competition but of the restrictions which the oil companies have themselves placed upon exports in order to meet the shortage at home.

Thus, the total exports of the last six months of 1919 were 402,251 barrels, value $643,599; for the first six months of 1920, 266,600 barrels, value $493,067.

Kerosene was shipped chiefly to the Orient, particularly to China, the grand total being 32,097,808 gallons, value $4,918,128, amounting to 37.9 per cent of the total quantity of oil exported and to 50 per cent of its value.

The exports from July to December, 1919, inclusive, as compiled by the harbor commissioners, were:

	Bbls.	Value
Kerosene	719,367	$4,130,944
Distillate	249,279	1,658,803
Fuel Oil	402,251	643,599
Gasoline	1,428	14,451
	1,372,325	$6,547,797

The exports for January to June, 1920, inclusive ,as compiled by the United States custom house officials are given more in detail, as follows:

	Bbls.	Value
British India		
Kerosene		$ 466,500

Tank Wagon, Service Station Markets

Gasoline and Kerosene

BELOW are given in cents a gallon service station and tank wagon quotations on gasoline and tank wagon quotations for kerosene, as quoted by the Standard Oil Companies, the points at which prices are given being arranged by Standard Oil marketing districts. By tank wagon price is meant the price to reselling agents and not the price from the tank wagon to consumers.

	Gasoline Tank Wagon Oct. 18	Gasoline Service Station Oct. 18	Oil Tank Wagon Oct. 18
S. O. NEW JERSEY DISTRICT			
Atlantic City, N. J.	29.5	31.5	18.5
Newark, N. J.	29.5	31.5	18.5
Annapolis, Md.	30.5	32.5	19
Baltimore, Md.	29.5	31.5	18
Washington, D. C.	29.5	31.5	18.5
Danville, Va.	31	33	19.5
Norfolk, Va.	30	32	18.5
Petersburg, Va.	30.5	32.5	20
Richmond, Va.	30	32	18.5
Roanoke, Va.	31.5	33.5	20
Charleston, W. Va.	30.5	32.5	19
Keyser, W. Va.	31	33	19.5
Parkersburg, W. Va.	29.5	31.5	18
Wheeling, W. Va.	30.5	32.5	19
Charlotte, N. C.	31	33.5	20.5
Hickory, N. C.	31.5	33.5	21
Mt. Airy, N. C.	31.5	33.5	21
Salisbury, N. C.	31.5	33.5	21
Charleston, S. C.	30.5	32.5	19
Columbia, S. C.	32	34	20.5
S. O. NEW YORK DISTRICT			
New York, N. Y.	31	33	19
Albany, N. Y.	32	34	20
Buffalo, N. Y.	32	34	20
Syracuse, N. Y.	32	34	20
Boston, Mass.	32	34	20
Burlington, Vt.	32	34	20
Bridgeport, Conn.	32	34	20
Hartford, Conn.	32	34	20
New London, Conn.	32	34	20
Providence, R. I.	32	34	20
Augusta Me.	32	34	20
Portland, Me.	32	34	20

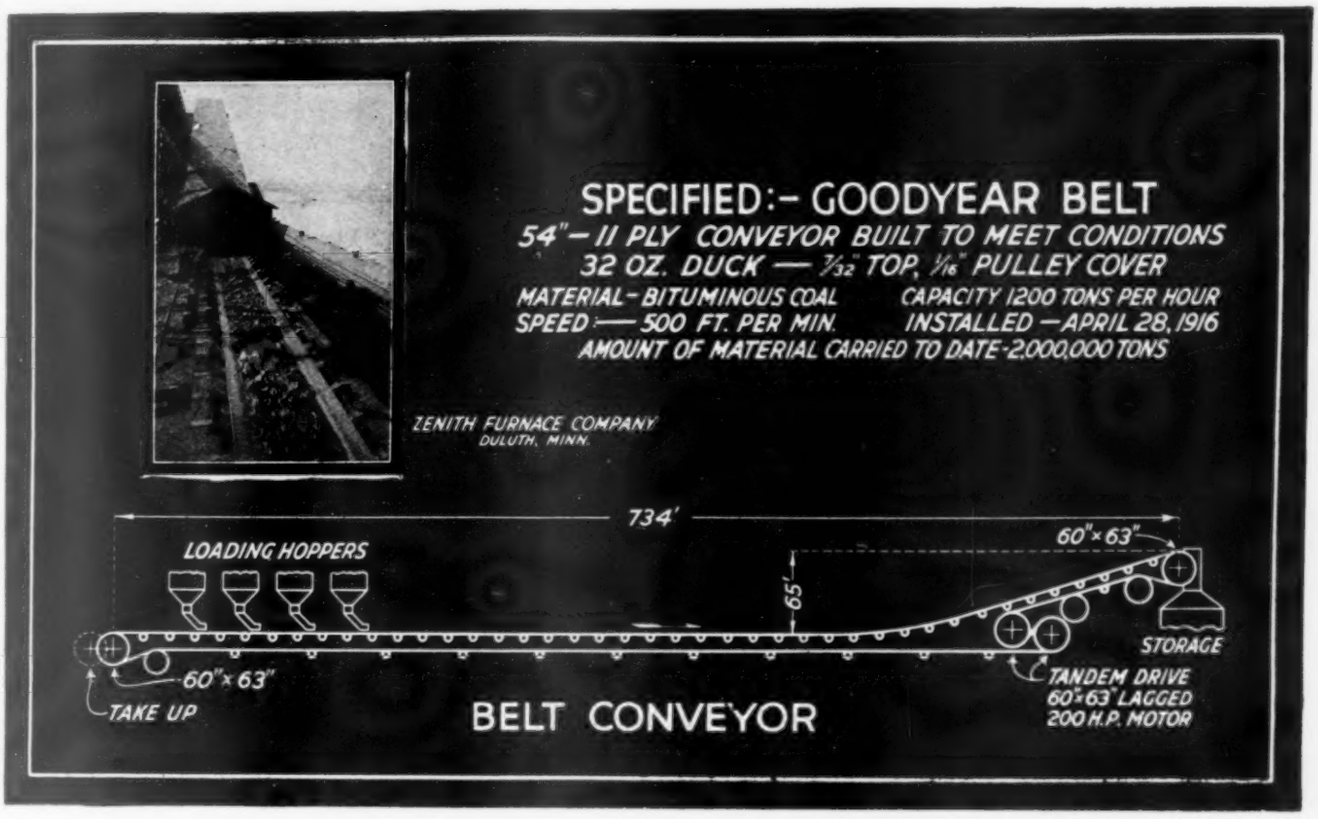
NOTE.—Atlantic Refining Company on September 2 advanced its price on gasoline at Providence, R. I., Hartford, Conn., New Haven, Conn., Worcester, Mass. and Springfield, Mass., making the service station price 35 cents and the tank wagon price 10 per cent less, or 31.5 cents. The increase was one cent on service station and, nine-tenths cent tank wagon.

ATLANTIC REFINING DISTRICT			
Pittsburgh, Pa.	30.6	34	20
Philadelphia, Pa.	30.6	34	20
Dover, Del.	30.6	34	20
Wilmington, Del.	30.6	34	20
S. O. OHIO DISTRICT			
Cleveland, Ohio	30	31	21

NOTE—Tank wagon markets at all points in Ohio are the same as for Cleveland.

S. O. KENTUCKY DISTRICT			
Lexington, Ky.	29	31	20
Louisville, Ky.	28	30	19
Bowling Green, Ky.	29.5	31.5	20.5
Jackson, Miss.	28.5	30.5	19.5
Natchez, Miss.	28.5	30.5	19.5
Birmingham, Ala.	30	32	21
Mobile, Ala.	30	32	20
Atlanta, Ga.	30	32	20.5
Augusta, Ga.	30	32	20.5
Savannah, Ga.	30	32	20.5
Fort Myers, Fla.	30.5	32.5	21.5
Tampa, Fla.	29.5	31.5	20.5
S. O. LOUISIANA DISTRICT			
Camden, Ark.	29	32	22
Little Rock, Ark.	29	32	22
Baton Rouge, La.	25.5	28.5	17
New Orleans, La.	26.5	29.5	18
Shreveport, La.	27.5	30.5	19
Chattanaoga, Tenn.	29.5	32.5	21
Nashville, Tenn.	28.5	31.5	20.5
Memphis, Tenn.	28	31	20
Nashville, Tenn.	28.5	31.5	20.5

	Gasoline Tank Wagon Oct. 18	Gasoline Service Station Oct. 18	Oil Tank Wagon Oct. 18
MAGNOLIA PETROLEUM DISTRICT			
Muskogee, Okla.	30	32	21
Oklahoma City, Okla.	29	31	19
Tulsa, Okla.	28	30	20
Fort Smith, Ark.	28.5	30.5	21
Texarkana, Ark.	30	32	21
Amarillo, Texas.	31	33	22
Dallas, Texas.	28	30	21
El Paso, Texas.	29	31	22
Fort Worth, Texas.	28	30	21
Galveston, Texas.	28	30	21
Houston, Texas.	28	30	21
S. O. INDIANA DISTRICT			
Chicago, Ill.	27	29	18.5
East St. Louis, Ill.	28.3	29.3	18
Evansville, Ind.	28.9	29.9	19.2
Indianapolis, Ind.	28.3	29.3	19
Fort Wayne, Ind.	28.4	29.4	19.5
Bay City. Mich.	28.9	29.9	19.7
Detroit, Mich.	28.8	29.8	19.6
St. Louis, Mo.	26.2	28.5	19
Kansas City, Kans.	26.5	27.5	17.2
Topeka, Kans.	27.8	28.8	17.6
Wichita, Kans.	27.1	28.1	17.5
Des Moines, Ia.	28.5	29.5	19.5
Keokuk, Ia.	28.4	29.4	19.1
Sioux City, Ia.	28.5	29.5	19.3
La Crosse, Wis.	29	30	19.8
Milwaukee, Wis.	27.9	28.9	18.7
Madison, Wis.	28.1	29.1	18.9
Minneapolis, Minn.	28.2	30.2	20
Pipestone, Minn.	29.3	30.3	20
Aberdeen, S. D.	30.1	31.1	20.6
Sioux Falls, S. D.	30.1	31.1	20
Bismarck, N. D.	33.6	34.6	23.3
Fargo, N. D.	32	33	21.7
Grand Forks, N. D.	32.3	33.3	22
Minot, N. D.	34.4	35.4	24.1
Bartlesville, Okla.	27.3	28.3	17.7
S. O. NEBRASKA DISTRICT			
Crawford, Neb.	30	30	21
Omaha, Neb.	29.5	29.5	19.75
CONTINENTAL OIL DISTRICT			
Denver, Colo.	32	34	23
Glenwood Springs, Colo.	36	38	26.5
Pueblo, Colo.	32	34	23
Basin, Wyo.	29.5	31.5	20
Casper, Wyo.	28	30	18.5
Cody, Wyo.	31.5	33.5	22
Cheyenne, Wyo.	31.5	33.5	22
Lander, Wyo.	30.5	32.5	21
Billings, Mont.	31.5	33.5	22.5
Butte, Mont.	33.5	35.5	24.5
Great Falls, Mont.	33.5	35.5	24.5
Helena, Mont.	33.5	35.5	24.5
Miles City, Mont.	33.5	35.5	24.5
Ogden, Utah.	32	34	22.5
Salt Lake City, Utah.	32	34	22.5
Boise, Idaho.	34.5	36.5	25
Albuquerque, N. M.	33.5	35.5	25
S. O. CALIFORNIA DISTRICT			
Phoenix, Ariz.	37	37	23.5
Los Angeles, Cal.	27	27	16.5
Fresno, Cal.	28	28	19
San Francisco, Cal.	27	27	16.5
Reno, Nev.	35	35	26.5
Portland, Ore.	29	29	17.5
Seattle, Wash.	28	28	17.5
Spokane, Wash.	32	32	23.5
Tacoma, Wash.	28	28	17.5



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Half the Unloading Time—And the G. T. M.

They unload a 10,000-ton cargo of coal in from 10 to 12 hours at the Zenith Furnace Company's dock in Duluth, Minn., with the aid of their specially built Goodyear Conveyor Belt. To do the same job used to take from 20 to 24 hours. So the economy of the great belt tells in money saved by swift and trouble-free conveying, and in quick clearance of the boats that have to make every hour count in the limited season on the inland seas.

The long life and operating economy of this conveyor are striking tribute to the value of scientific analysis in the specification, design and construction of a belt to the particular duty required of it. This belt was built and installed on the expert analysis principle which is the working method of the G. T. M.—Goodyear Technical Man.

Every service condition was carefully analyzed, with Zenith Furnace Company officials co-operating in furnishing operating data. The conveyor is troughed and driven by a 200 H. P. motor, with gear and clutch arrangement regulating the speed, sometimes at 300 feet per minute, usually at 500 F.P.M. The drive is tandem, with lagged pulleys. Head, tail and drive pulleys are all 60" in diameter, with 63" face. Troughing idlers are spaced three feet center to center, return idlers, 8' 3".

Four grizzly feeds simultaneously load the belt. The coal is fed from automatic feeders, spreading first a layer of dust and fine coal as a cushion for the one- and two-foot lumps. The belt itself is 1,525 feet long, 54 inches wide, 11-ply, special construction throughout, with 7/32" top cover and 1/16" bottom cover.

Its staunch, Goodyear character is best revealed by its condition in this, its fifth season, after having carried more than 2,000,000 tons. The average wear on its specially compounded cover is one sixty-fourth of an inch. Only a high grade cover stock such as Goodyear Conveyor Belts have could resist with less than 10% wear the weather and abrasion conditions that this belt has withstood. It looks good, Supt. Collins says, for years to come.

The qualities of Goodyear Conveyor Belts are summed up in ability—ability to carry the tonnage, to resist abrasion, to work steadily under varying atmospheric conditions, to set up new records for economical conveying, to operate with a notable freedom from trouble, to last a long time, and to protect our good name. If you have a conveying problem, it is to your advantage to have the G. T. M. analyze it. Write about it to The Goodyear Tire & Rubber Company, Akron, Ohio, or Los Angeles, California.

GOODYEAR

	Bbls.	Value
Canada		
Fuel and gas oil	99,000	173,150
Lubricating	6	134
Chile		
Kerosene	452	4,846
China		
Fuel and gas oil	42,920	79,400
Kerosene	238,508	1,472,346
Lubricating	2	60
Costa Rica		
Naphthas		19
Ecuador		
Kerosene	36	313
Lubricants	5	212
Honduras		
Lubricants	1	30
Hongkong		
Fuel and gas oil	81,364	143,549
Kerosene	11,905	127,218
Japan		
Fuel and gas oil	42,340	95,126
Kerosene	88,270	427,516
Lubricants	9	263
Gasoline	3,736	54,383
Mexico		
Crude	74	178
Fuel and gas oil	970	1,842
Kerosene	80	1,445
Lubricating	42	894
Gasoline	282	4,572
Not stated	80	707
Nicaragua		
Lubricating (gallons)	12	20
Philippine Islands		
Kerosene	2,620	28,675
Salvador		
Kerosene	70	815
Lubricating	6	164
Gasoline	418	6,779
Not stated	12	165
Straights Settlement		
Kerosene	30,000	158,500
	643,208	$9,797,688

The value of the oil well machinery and supplies exported for the first six months of the fiscal year, but not given in detail as to port of destination, was $107,400; for the second six months the value was $106,277; total, $213,677. The only detailed information as to destination of the machinery is given in the last six months, as follows:

	Value
Columbia	$30,822
Dutch East Indies	51,818
Ecuador	21,200
Egypt	21,531
Peru	906

Complete Refinery Starts At Healdton

Staff Special

TULSA, Oct. 15.—The Bay State Refining Company, recently organized by Earle G. Hastings, former treasurer of the Bigheart Producing & Refining Company, and J. Murray Walker of the firm of J. Murray Walker & Company, of Boston, announces completion of its refinery and lubricating plant at Healdton, Okla.

The plant is a modern refinery, compounding and barreling plant with a capacity of 1,000 barrels of finished product a day, which capacity will later be increased to 2,000 barrels. The company has 150 tank cars in which to market its products, which includes a complete line of refined products, such as cordage oils, steam refined cylinder stocks and lubricating oils.

The Bay State Refining Company is a Massachusetts corporation with its capitalization of $1,500,000, all of which will be issued at this time.

Mr. Hastings, president of the Bay State Refining Company, was formerly general manager of the Massachusetts-Oklahoma Oil Company and the Bigheart Petroleum Refining Company, and later treasurer of the Bigheart Producing & Refining Company, which companies he and his associates organized.

Crude Production, Consumption and Stocks

As Reported by U. S. Geological Survey

THE column headed Production shows the quantity of oil received from producers by pipe line and other marketing companies and by refineries that receive the crude directly from the well. Figures as to oil consumed on leases and producers' stocks are not included except for California, which include all petroleum brought to the surface

The column headed Delivered to Consumers includes figures on domestic crude petroleum delivered to consumers by pipe lines and other marketing companies.

Stocks include domestic crude held in storage on the last day of the month by pipe lines and other marketing companies. Crude oil delivered to refiners is not included nor is petroleum held in storage by producers on leases. Figures are in barrels of 42 gallons.

Field	Production	Delivered to Consumers	Stocks
APPALACHIAN			
Total, 1919	29,232,000	28,922,000	Mar. 31, 4,316,000
May, 1920	2,488,000	2,615,000	May 31, 4,121,000
June, 1920	2,658,000	2,696,000	June 30, 4,083,000
July, 1920	2,613,000	2,799,000	July 31, 3,922,000
Aug., 1920	2,649,000	2,641,000	Aug. 31, 3,930,000
LIMA-INDIANA			
Total, 1919	3,444,000	3,442,000	Mar. 31, 1,237,000
May, 1920	270,000	189,000	May 31, 1,303,000
June, 1920	271,000	219,000	June 30, 1,355,000
July, 1920	275,000	191,000	July 31, 1,439,000
Aug., 1920	266,000	158,000	Aug. 31, 1,547,000
ILLINOIS			
Total, 1919	12,436,000	10,165,000	Mar. 31, 3,918,000
May, 1920	935,000	1,119,000	May 31, 3,711,000
June, 1920	931,000	1,064,000	June 30, 3,578,000
July, 1920	925,000	1,099,000	July 31, 3,404,000
Aug., 1920	924,000	1,091,000	Aug. 31, 3,327,000
ALL MID-CONTINENT (Okla., Kans., Central and North Texas, North La.)			
Total, 1919	196,891,000	198,901,000	Mar. 31, 78,188,000
May, 1920	21,100,000	20,589,000	May 31, 78,951,000
June, 1920	21,484,000	17,782,000	June 30, 82,653,000
July, 1920	22,124,000	19,184,000	July 31, 85,681,000
Aug., 1920	22,357,000	20,765,000	Aug. 31, 87,273,000

Oklahoma-Kansas	Production	Central North Texas	Production
May, 1920	12,609,000	May, 1920	5,639,000
June, 1920	12,592,000	June, 1920	5,776,000
July, 1920	12,919,000	July, 1920	5,912,000
Aug. 1920	13,089,000	Aug., 1920	5,894,000

North Louisiana	Production
May, 1920	2,852,000
June, 1920	3,116,000
July, 1920	3,293,000
Aug., 1920	3,374,000

GULF COAST	Production	Delivered to Consumers	Stocks
Total, 1919	20,568,000	17,417,000	Mar. 31, 11,489,000
May, 1920	2,043,000	2,158,000	May 31, 11,133,000
June, 1920	2,042,000	2,453,000	June 30, 10,722,000
July, 1920	2,296,000	2,640,000	July 31, 10,377,000
Aug., 1920	2,408,000	2,173,000	Aug. 31, 10,612,000
ROCKY MOUNTAIN			
Total, 1919	20,568,000	17,417,000	Mar. 31, 227,000
May, 1920	1,387,000	1,408,000	May 31, 217,000
June, 1920	1,643,000	1,637,000	June 30, 223,000
July, 1920	1,603,000	1,598,000	July 31, 228,000
Aug., 1920	1,543,000	1,520,000	Aug. 31, 251,000
CALIFORNIA			
Total, 1919	101,564,000	103,016,000	Mar. 31, 26,222,000
May, 1920	8,636,000	9,155,000	May 31, 25,253,000
June, 1920	8,190,000	9,383,000	June 30, 24,060,000
July, 1920	8,583,000	9,526,000	July 31, 23,117,000
Aug., 1920	8,997,000	9,965,000	Aug. 31, 22,149,000

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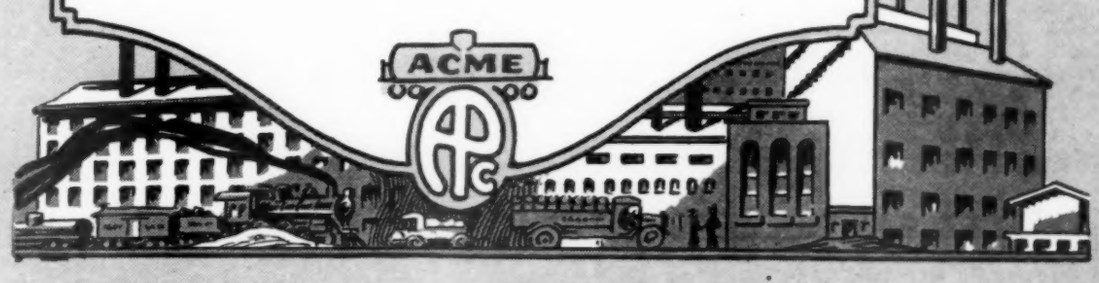


Institute Wins; Gets 60 Coal Cars For Pipe

By Special Correspondent

WASHINGTON, Oct. 15.—On a showing of dire necessity, equal to that of the most distressed users of coal, the Interstate Commerce Commission has renewed its permission to steel mills to use daily sixty coal cars for loading tubular goods for the oil fields of the country, for shipments from Pittsburgh, Youngstown and Lorain. Reduction of the daily allowance from sixty to thirty cars, ordered by the commission, never actually went into effect.

This renewal is in the form of Permit No. 1001, the first in the series brought into effect under the new rules for the conservation and distribution of coal cars. It is the result of the effort of the American Petroleum Institute carried forward by Messrs. Dow, Gormley and Shaughnessy, attorneys and traffic men for the institute.

The new order permits loading of coal cars with such goods at the Lorain, Ohio, plant of the National Tube Company, a big producer. In all other respects the new order is like the old one. It is not as much as the three men mentioned hoped to procure. Their application was for a daily allowance of eighty coal cars. The commission, however, decided that sixty would have to suffice.

Importance of sending steel to the oil fields, from the commission's point of view, may be inferred from the fact that it is the first permit issued under the new plan of controlling the use of coal cars for purposes other than the hauling of coal.

Other users of coal cars for non-coal purposes are likely to remain off the list of permittees entirely. While the oil men could use many more cars of steel than they are likely to receive, the treatment given them is regarded by those who know something of the pressure on the railroad regulators, as not to be sneered at.

The renewal of the permit is due entirely to the showing of necessity submitted by the institute. Influence would not count at all in the disposal of such a matter as this. The institute proceeded upon the assumption that the commission knows the strength of the demand for oil and that that demand is not being met, so far as domestic production is concerned and has not been since the resumption of demand in 1919.

The demand for tubular goods, the institute men told the commissioners, began last year has never been met. None of the supply houses were able to accumlate a stock after the demand was resumed. Some tube mills, by reason of the short car supply, have been forced to close and that has aggravated an already bad situation.

Conditions in every important field in the country were reviewed in a survey laid before the commissioners by Mr. Dow in behalf of the institute. The first fact is that greatly increased drilling in Mexico and South America have put a strain on the tube mills, which have not been able to fill the demands.

In 1915, according to the showing made to the commissioners, there were 6,116 wells in the country each producing, on an average, 40.96 barrels per day. In 1020, 9,273 wells were producing on an average of only 29.64 barrels. Usually from 30 to 40 per cent of production is from new wells. Those facts were laid before the commissioners, first to show that 50 per cent more wells than in 1915 are producing, per well, only about 70 per cent per well of what was being produced in 1915. Second, that if the current consumption and current production in America are to be brought nearer each other many more new wells must be drilled.

In the review of the situation by districts the institute said that in California the situation is "very acute." That district needs from 10,000 to 12,000 tons of steel per month. Thus far it has been receiving only a small part of its requirements. Drilling is dropping off and the work on projects that have been undertaken is being retarded.

As to Wyoming, the institute said, there was less than a ten days' supply on hand on the last day of September. The fact in that field is that tubular goods for use during the winter must be on hand before the end of November, else new work must stop until next May. That is because the steel must be hauled forty and fifty miles from the railroads and the Wyoming roads are not suitable for that kind of hauling in the winter. Shutting down in Wyoming, the institute's survey said, means a loss of 8,500 barrels of fuel oil and 10,000 barrels of gasoline every day.

In the Mid-Continent field the supply is much less than the requirement. Drilling operations are being retarded thru the inability to obtain supplies. One of the large pipe line companies of the southwest reported that of the sixty carloads of steel ordered within a given time only ten had been received.

In all the fields east of California, the survey said, there were 7,588 wells as compared with 7,799 in August and 8,079 in July. Of the rigs ready to drill there were 2,222 in September compared with 2,487 in August and 2,987 in July.

It was on such facts the commission acted. In behalf of the institute it was said that every one of the declarations could be proved and much elaborated if desired by the commission, and that, too, without any delay. In other words, the institute was prepared to prove its case with as great exactness as if it were proceeding in court under the strictest rules of evidence.

OIL CITY, PA., Oct. 16.—J. D. Berry, president of the James B. Berry's Sons Company, and Sam Messer, vice president, are on a trip thru Canada and the western states, visiting stations and plants in which their company is interested.

William T. Keup, formerly with the Sun Company in the capacity of a lubrication engineer, is now identified with the Lindsay McMillan Company, of Milwaukee. He is in charge of the Chicago branch office, opened recently at 30 North Dearborn street.

Orders Uniform Rates From Branch Lines

WASHINGTON, Oct. 15.—An order from the Interstate Commerce Commission, directed to the Santa Fe and its connections requires it to establish rates on petroleum and its products from Drumright, Pemeta, Oilton and five other stations, via Cushing, no higher than are in effect from other Group 3 points in the Mid-Continent field, to all interstate destinations.

The order permits the carriers to dawdle along until Jan. 21, but there is danger in dawdling (because the findings as to rates now in effect is "unreasonable" and a finding of that kind as a matter of law, must be followed by an award directing the return of the money.

This direction is the outcome of a formal complaint against the Santa Fe and its connections by the Western Petroleum Refiners' Association, represented in this proceeding by Clifford Thorne.

The complaint was lodged against the practice of the Santa Fe of charging 1 per cent per 100 pounds more for shipments from the stations on the branch lines on which the stations mentioned are situated than from main line points in Group 3. The branch line points, the commission's report says, geographically, are situated in the middle of the district, but not given the benefit of the group rates, because, before the Santa Fe bought the branch lines, which were originally built as electric trolley lines to tap that part of the Cushing field, the owners of the traction lines used to have to charge a cent more because the Santa Fe would not make joint rates with them no higher than Group 3 rates.

Charter Is Granted To Tidal Western Oil Co.

TULSA, OKLA., Oct. 15. — An Oklahoma charter has been granted the Tidal Western Oil Company, of Tulsa, with a capitalization of $1,500,000, thru Joe S. Morris, secretary of state. Incorporators of the new company were W. M. Welch, D. M. Bell and E. H. Salrin.

The Tidal Western Oil Company was organized for the purpose of operating the properties in Texas in which the Tidal Gasoline Company recently acquired an interest, by the purchase of 50 per cent of the Western Oil Corporation. While the Tidal Western Oil Corporation owns but a half interest in the Texas properties, it will operate them and the 1,500-barrel refinery of the Burkburnett Refining Company, which was acquired after the Western Oil Corporation purchase as a part of the original Tidal Western transaction.

The refinery started operations this week and will be enlarged shortly to 2,500 or 3,000-barrel capacity. The Tidal, which is now one of the largest casinghead manufacturers in the Mid-Continent, has recently purchased 100 additional tank cars to facilitate the movement of its refined products.

According to W. M. Welch, general manager of the Tidal Gasoline Corporation, the officers of the Tidal Western Company, and other details of the organization, will be announced later.

"Western Petroleum" Trade Bulletin

Form 1201 6

CLASS OF SERVICE	SYMBOL
Day Message	
Day Letter	Blue
Night Message	Nite
Night Letter	N L

If none of these three symbols appears after the check (number of words) this is a day message. Otherwise its character is indicated by the symbol appearing after the check.

WESTERN UNION TELEGRAM

NEWCOMB CARLTON, PRESIDENT GEORGE W. E. ATKINS, FIRST VICE-PRESIDENT

CLASS OF SERVICE	SYMBOL
Day Message	
Day Letter	Blue
Night Message	Nite
Night Letter	N L

If none of these three symbols appears after the check (number of words) this is a day message. Otherwise its character is indicated by the symbol appearing after the check.

RECEIVED AT ,ROSE BLDG., 2040 EAST 9TH STREET, CLEVELAND

CHICAGO, ILL., OCT. 19, 1920

NATIONAL PETROLEUM NEWS
CAXTON BUILDING
CLEVELAND OHIO

MARKETS REMAIN UNSTABLE NUMBER OF SMALL REFINERIES COMPELLED TO CLOSE BELIEVE BOTTOM HAS BEEN REACHED

J. M. CARSON SALES MANAGER
WESTERN PETROLEUM COMPANY

TULSA, OKLAHOMA
Cosden Bldg.

NEW YORK CITY
17 Battery Place
Direct All Eastern Inquiries to This Office

Western Petroleum Company
208 South La Salle ST Chicago, Ill.

Crude Oil Quotations From All Fields

Price Changes From September 1, 1919, To Date

EASTERN FIELDS

Pennsylvania

1919—Sept. 2 +25¢—Nov. 7 +25¢—Dec. 22 +25¢—Dec. 31 +25
1920—Jan. 26 +25¢—Feb. 5 +25¢—Feb. 17 +25¢—Feb. 27 +15¢—Mar. 1 +15¢—Mar. 2 +15¢

Cabell

1919—Sept. 2 +10¢—Nov. 7 +15¢—Dec. 22 +25¢—Dec. 31 +15c
1920—Feb. 28 +25¢—May 11 +25c

Wooster

1919—Sept. 8 +10¢—Nov. 21 +25¢
1920—Jan. 12 +25¢—Mar. 1 +10¢—Mar. 10 +25¢

Corning

1919—Sept. 2 +10¢—Nov. 7 +15¢—Dec. 22 +25¢—Dec. 31 +15¢
1920—Mar. 10 +15¢—Mar. 19 +10¢—Mar. 30 +25¢—May 15 +25¢

North Lima

1919—Sept. 8 +10¢—Nov. 21 +25¢—Dec. 22 +25¢
1920—Jan. 12 +25¢—Mar. 1 +25¢—Mar. 10 +25¢

South Lima

1919—Sept. 8 +10¢—Nov. 21 +25¢—Dec. 22 +25¢
1920—Jan. 12 +25¢—Mar. 1 +25¢—Mar. 10 +25¢

Indiana

1919—Sept. 8 +10¢—Nov. 21 +25¢—Dec. 22 +25¢
1920—Jan. 12 +25¢—Mar. 1 +25¢—Mar. 10 +25¢

Princeton

1919—Sept. 8 +10¢—Nov. 21 +25¢—Dec. 22 +25¢
1920—Jan. 12 +25¢—Mar. 1 +25¢—Mar. 10 +25¢

Somerset

1919—Sept. 2 +10¢—Nov. 7 +15¢—Dec. 22 +25¢—Dec. 31 +15¢
1920—Feb. 27 +15¢—Mar. 10 +25¢—May 10 +25¢—Sept. 23 +25¢

Ragland

1919—Nov. 7 +10¢—Dec. 22 +25¢—Dec. 31 +15¢
1920—May 10 +35¢—July 20 +25¢—Sept. 23 +25 ¢

Illinois

1919—Sept. 8 +10¢—Nov. 21 +25¢—Dec. 22 +25¢
1920—Jan. 12 +25¢—Mar. 1 +25¢—Mar. 10 +25¢

Plymouth

1919—Nov. 21 +20¢—Dec. 22 +25¢
1920—Mar. 1 +20¢—Mar. 3 +25c

MID-CONTINENT

Okla.-Kans.

1919—Nov. 19 +25¢—Dec. 20 +25¢
1920—Jan. 5 +25¢—Feb. 27 +25¢—Mar. 1 +25¢

Healdton

1919—Feb. 21, reduced 25¢—Nov. 21 +15¢—Dec. 19 +65¢—Dec. 22 +25¢
1920—Jan. 8 +25¢—Feb. 27 +25¢—Mar. 3 +25¢

Hewitt

1919—Dec. 2 +40¢—Dec. 22 +25¢
1920—Feb. 27 +25¢—Mar. 1 +25¢

TEXAS FIELDS

Burkburnett

1919—Oct. 1, reduced 25¢—Nov. 22 +25¢—Dec. 20 +25¢
1920—Jan. 5 +25¢—Feb. 27 +25¢—Mar. 1 +25¢

Electra

1919—Nov. 22 +25¢—Dec. 20 +25¢
1920—Jan. 5 +25¢—Feb. 27 +25¢—Mar. 1 +25¢

Corsicana Light

1919—Nov. 21 +25¢—Dec. 18 +25¢—Dec. 23 +25¢
1920—Jan. 6 +25¢—Feb. 27 +25¢—Mar. 1 +25¢

Corsicana Heavy

1919—Feb. 21, reduced 25¢—Nov. 21 +10¢—Dec. 23 +15¢
1920—Jan. 6 +25¢—Feb. 27 +25¢—Mar. 1 +20¢

Strawn

1919—Nov. 21 +25¢—Dec. 23 +25¢—
1920—Jan. 6 +25¢—Feb. 27 +25¢—Mar. 1 +25¢

Moran

1919—Nov. 21 +25¢—Dec. 23 +25¢
1920—Jan. 6 +25¢—Feb. 27 +25¢—Mar. 1 +25¢

Ranger

1919—Nov. 19 +25¢—Dec. 20 +25¢
1920—Jan. 5 +25¢—Feb. 27 +25¢—Mar. 1 +25¢

GULF COAST

Spindletop

1919—Jan. 14, reduced 30¢—Feb. 3, reduced 20¢—Mar. 19, reduced 30¢—Dec. 5 +25¢—Dec. 20 +25¢
1920—Jan. 7 +25¢—Feb. 19 +25¢—Mar. 3 +25¢—Mar. 4 +25¢—Apr. 13 +50¢

Goose Creek

1919—Jan. 14, reduced 30¢—Feb. 3, reduced 25¢—Mar. 19, reduced 25¢—Dec. 5 +25¢—Dec. 20 +25¢
1920—Jan. 7 +25¢—Feb. 19 +25¢—Mar. 3 +25¢—Mar. 4 +25¢—Apr. 13 +50¢

Sour Lake

1919—Jan. 14, reduced 30¢—Feb. 3, reduced 25¢—Mar. 19, reduced 25¢—Dec. 5 +25¢—Dec. 20 +25¢
1920—Jan. 7 +25¢—Feb. 19 +25¢—Mar. 3 +25¢—Mar. 4 +25¢—Apr. 13 +50¢

Humble

1919—Jan. 14, reduced 30¢—Feb. 3, reduced 25¢—Mar. 19, reduced 25¢—Dec. 5 +25¢—Dec. 20 +25¢
1920—Jan. 7 +25¢—Feb. 19 +25¢—Mar. 3 +25¢—Mar. 4 +25¢—Apr. 13 +50c

Batson

1919—Jan. 14, reduced 30¢—Feb. 3, reduced 25¢—Mar. 19, reduced 25¢—Dec. 5 +25¢—Dec. 20 +25¢
1920—Jan. 7 +25¢—Feb. 19 +25¢—Mar. 3 +25¢—Mar. 4 +25¢—Apr. 13 +50¢

Saratoga

1919—Jan. 14, reduced 30¢—Feb. 3, reduced 25¢—Mar. 19, reduced 25¢—Dec. 5 +25¢—Dec. 20 +25¢
1920—Jan. 7 +25¢—Feb. 19 +25¢—Mar. 3 +25¢—Mar. 4 +25¢—Apr. 13 +50¢

Dayton

1919—Jan. 14, reduced 30¢—Feb. 3, reduced 25¢—Mar. 19, reduced 25¢—Dec. 5 +25¢—Dec. 20 +25¢
1920—Jan. 7 +25¢—Feb. 19 +25¢—Mar. 3 +25¢—Mar. 4 +25¢—Apr. 13 +50c

West Columbia

1919—Jan. 14, reduced 30¢—Feb. 3, reduced 25¢—Mar. 19—May 1, reduced 25¢
1920—Jan. 7 +25¢—Feb. 19 +25¢—Mar. 3 +25¢—Mar. 4 +25¢—Apr. 13 +50¢

LOUISIANA FIELDS

Homer

1919—June 7 +10¢—Dec. 3 +25¢
1920—Jan. 6 +25¢—Feb. 28 +25¢

Bull Bayou

1919—Dec. 3 +25¢
1920—Jan. 6 +25¢—Feb. 28 +25¢—Mar. 15 +25¢

Caddo (above 38°

1919—Dec. 3 +25¢—Dec. 22 +25¢
1920—Feb. 28 +25¢—Mar. 15 +25¢

De Soto (above 38°)

1919—Dec. 3 +25¢—Dec. 22 +25¢
1920—Feb. 28 +25¢—Mar. 15 +25¢

Caddo (35° to 37.9°)

1919—Dec. 3 +25¢
1920—Jan. 6 +25¢—Feb. 28 +25¢—Mar. 15 +25¢

Caddo (32° to 34.9°)

1919—Dec. 3 +25¢
1920—Jan. 6 +25¢—Feb. 28 +25¢—Mar. 15 +25¢

Caddo Heavy

1919—Jan. 14, reduced 30¢—Feb. 4, reduced 25¢—Mar. 21, reduced 25¢—Dec. 3 +25¢
1920—Jan. 6 +25¢—Feb. 27 +25¢—Mar. 15 +25¢—May 3 +25¢—May 10 +25¢

Crichton

1919—Dec. 3 +25¢—Dec. 22 +25¢
1920—Jan. 6 +25¢—Mar. 15 +25¢

Pine Island

1919—Feb. 27 +25¢—Dec. 3 +25¢
1920—Jan. 6 +25¢—May 3 +25¢—May 10 +25¢

WYOMING

Elk Basin

1919—Mar. 2 +25¢—Nov. 21 +25¢—Dec. 23 +25¢
1920—Jan. 13 +25¢—Mar. 16 +25c

Grass Cree

1919—Mar. 2 +25¢—Nov. 21 +25¢—Dec. 23 +25¢
1920—Jan. 13 +25¢—Mar. 16 +25¢

Big Muddy

1919—Mar. 2 +25¢—Nov. 21 +25¢—Dec. 23 +25¢
1920—Jan. 13 +25¢—Mar. 16 +25¢

Salt Creek

1919—Mar. 2 +25¢—Nov. 21 +25¢—Dec. 23 +25¢
1920—Jan. 13 +25¢—Mar. 16 +25¢

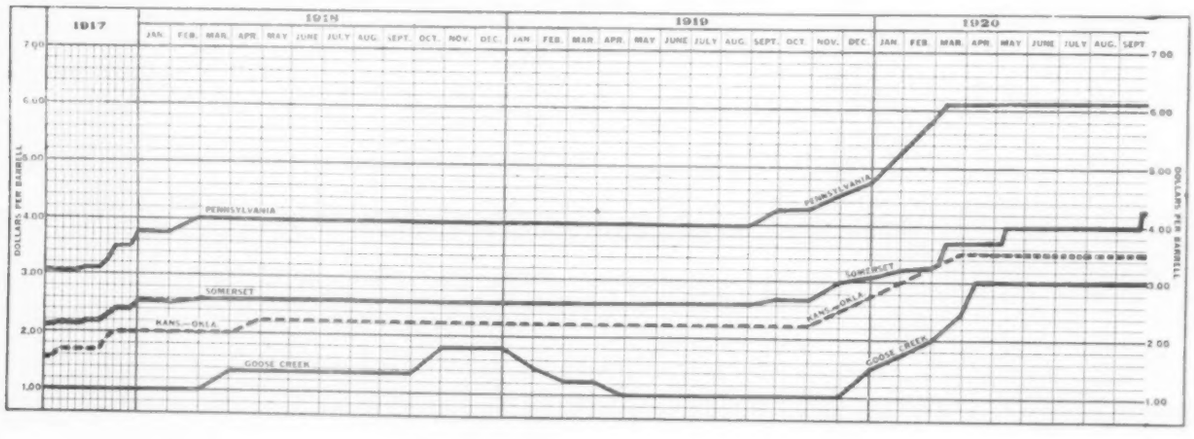
Lance Creek

1919—Mar. 2 +25¢—Nov. 21 +25¢—Dec. 23 +25¢
1920—Jan. 13, 25¢—Mar. 16, 25¢

Rock Creek

1919—Nov. 21 +25¢—Dec. 23 +25¢
1920—Jan. 13 +25¢—Feb. 4 +10¢—Mar. 2 +15¢—Mar. 16 +25¢

Price Trend of Principal Crudes Through September 1920



Crude Oil Prices

EASTERN FIELDS	Oct. 18 1920	Jan. 1 1920	Jan. 1 1919
Pennsylvania	$6.10	$5.00	$4.00
Cabell	4.46	3.27	2.77
Wooster, O.	4.05	3.35	2.58
Corning	4.25	3.35	2.85
Lima	3.73	3.13	2.38
Lodi	4.00	3.13	2.38
Indiana	3.63	3.03	2.28
Princeton	3.77	3.17	2.42
Somerset Light (38 and up)	4.50	3.40	2.60
Somerset	4.25	3.40	2.60
Western Kentucky	3.93	3.08	2.28
Ragland	2.35	1.70	1.25
McKinney	2.60	....	....
Illinois	3.77	3.17	2.42
Plymouth	3.48	2.98	2.33
Canadian Petrolia	4.13	2.78	2.78
MID-CONTINENT			
Kans.-Okla.	$3.50	$2.75	$2.25
Healdton	2.75	2.00	....
Hewitt	3.50	2.75	....
TEXAS FIELDS			
North Texas			
Burkburnett	$3.50	$2.75	$2.25
Electra	3.50	2.75	2.25
Corsicana light	3.50	2.75	2.25
Corsicana heavy	1.75	1.05	1.30
Strawn	3.50	2.75	2.25
Moran	3.50	2.75	2.25
Ranger	3.50	2.75	2.25
Gulf Coast			
Spindletop	$3.00	$1.50	$1.80
Goose Creek	3.00	1.50	1.80
Sour Lake	3.00	1.50	1.80
Humble	3.00	1.50	1.80
Batson	3.00	1.50	1.80
Saratoga	3.00	1.50	1.80
Dayton	3.00	1.50	1.80
West Columbia	3.00	1.25	1.00
LOUISIANA FIELDS			
Homer	$3.25	$2.50	....
Bull Bayou	3.15	2.40	....
Caddo, above 38°	3.50	2.75	$2.25
De Soto, above 38°	3.40	2.65	2.15
Caddo, 35° to 37.9	3.40	2.65	2.15
Caddo, 32° to 34.9	3.35	2.60	2.10
Caddo, heavy	2.50	1.25	1.55
Crichton	3.00	2.25	1.75
WYOMING			
Elk Basin	$3.10	$2.10	$1.85
Grass Creek	3.10	2.10	1.85
Big Muddy	2.75	1.75	1.50
Salt Creek	2.75	1.75	1.50
Lance Creek	3.05	....	....
Rock Creek	2.75	....	....
Wyoming Black	1.75	....	....

CALIFORNIA

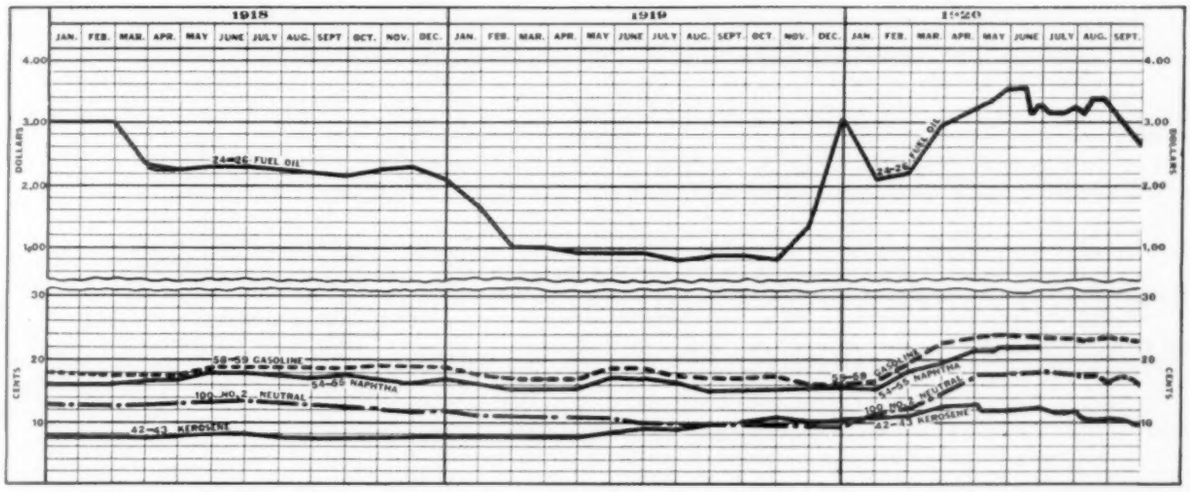
Effective January 30, the Standard Oil Company offered a new price schedule for crude at the well, the new schedule varying widely from the old one in effect since June 10, 1919, and advancing prices for higher gravity crudes very materially over the old figures, and to new record high levels for the California fields.

Effective March 17 the Standard of California advanced all grades in oil fields 25 cents a barrel over prices announced Jan. 30. Effective July 10 the Standard advanced all grades in all fields 12 cents a barrel. Prices Oct. 11 are as follows:

SAN JOAQUIN VALLEY AND WHITTIER-FULLERTON FIELDS

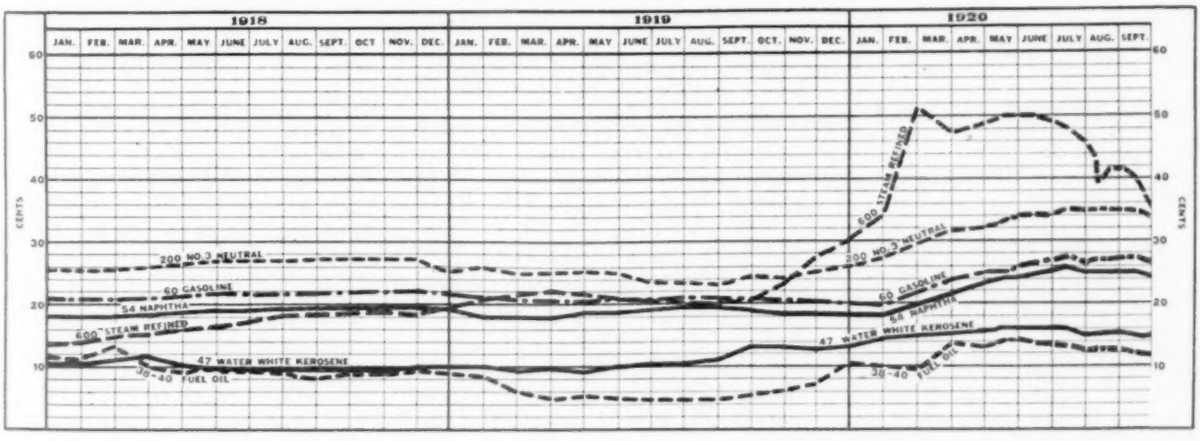
41 deg. to and including 17.9	$1.60 bbl.
18 deg. to and including 18.9	1.61 bbl.
19 deg. to and including 19.9	1.63 bbl.
20 deg. to and including 20.9	1.66 bbl.
21 deg. to and including 21.9	1.70 bbl.
22 deg. to and including 22.9	1.75 bbl.
23 deg. to and including 23.9	1.81 bbl.
24 deg. to and including 24.9	1.88 bbl.
25 deg. to and including 25.9	1.96 bbl.
26 deg. to and including 26.9	2.05 bbl.
27 deg. to and including 27.9	2.15 bbl.
28 deg. to and including 28.9	2.25 bbl.
29 deg. to and including 29.9	2.35 bbl.
30 deg. to and including 30.9	2.45 bbl.
31 deg. to and including 31.9	2.55 bbl.
32 deg. to and including 32.9	2.65 bbl.
33 deg. to and including 33.9	2.75 bbl.
34 deg. to and including 34.9	2.85 bbl.
35 deg. to and above	2.95 bbl.

Refinery Prices at Oklahoma Plants Through September, 1920



*Quotation of 54-55 Naphtha is discontinued because little is available due to the deeper gasoline cut being made by refineries.

Refinery Prices at Pennsylvania Plants Through September, 1920



OIL FINANCE

Tight Call Funds Restrict Market

TIGHTENING of call funds had the effect of restricting market operations. This condition, however, is not expected to last any length of time. Following the recent advance in rails, there was a tendency to take second thought of conditions, with a corresponding falling off in operations on the long side. On the other hand, the bears have not succeeded in prying loose any large blocks of stock, and the industrial group presents a stronger front for this reason.

Oil Issues in More Satisfactory Situation

Whatever activity there was was chiefly confined to oil stocks. General Asphalt, Carib Syndicate, White Oil and Producers & Refiners stood out in sharp contrast with the remainder of the list. Producers & Refiners shares have shown consistent strength in a market where bearish influences were predominant. The company is going thru a process of reorganization which will place it in a very favorable position among the complete oil units of the second class, it is said. Mexican Petroleum was unaffected by the reports from Tampico of salt water troubles, which were toned down by later advices. There was some special liquidation in the Royal Dutch and Shell Transport issues, due supposedly to foreign demand for funds in readiness for the payment of the Anglo-French loan on October 15. Simms Petroleum was helped by the report of its sale of 500,000 barrels of Homer crude.

October Markets Improving Over September

While the general price-reductions in a wide variety of commodities sent industrial issues tumbling to new low levels, rail issues, except for a temporary set-back, held out against anything like a panic and sustained the market until industrials had a chance to recover. This situation is now being corrected, especially as to oils, and the outlook as a whole is much more satisfactory than three months ago.

Union Oil Company Of California Shows $46,200,000 Sales In 9 Months

Operations of the Union Oil Company of California are well enough along to give some idea of the probable financial results for 1920, and they are said to be most encouraging. Profits earned from all operations, less general expenses, regular taxes, interest charges, and employes' share of profits, for nine months ended September 30, 1920, according to a statement sent out by President W. L. Stewart on October 7, were approximately as follows:

	1920 Amount	1920 Per Cent Per Annum	1919 Amount	1919 Per Cent Per Annum
Profit subject to depreciation and federal income and excess profit taxes	$16,000,000	28	$13,100,000	28
Provision for depreciation, depletion, and labor and incidental cost of new drilling	5,500,000	10	3,900,000	8
Profit subject to federal income and excess profit taxes	$10,500,000	18	$ 9,200,000	20

At the same ratio, net profits for the entire year, subject to federal income and excess profit taxes, would be around $13,500,000, or approximately 24 per cent per annum, on combined capital and surplus, comparing with $12,388,253 for 1919. President Stewart continues:

"Production in the state of California by the company and controlled companies combined approximates 6,275,000 net barrels, a decrease over the same period last year of 185,000 barrels. Altogether 24 wells were brought in during the nine months, with a total production of about 5,250 barrels per day. In addition to the foregoing, there was brought in, on August 7, 1920, on Lot 114 in the Chinampa district, Mexico, our first producing well in that country. The production from this well to September 30, 1920, approximates 2,000,000 barrels, so that our total production for the nine months shows an increase of approximately 1,815,000 barrels over the same period last year. At the present time the company has 47 strings of tools in operation in the states of California, Texas and Wyoming and in Mexico."

Sales for the nine months approximated $46,200,000, an increase in value of $6,700,000, or about 17 per cent. The large deliveries of fuel oil during the period have caused a draft on the company's oil stocks, which, notwithstanding the large credit for oil due it from Mexico, show a decline of about 1,200,000 barrels.

Capital expenditures approximated $9,300,000, consisting principally of the cost of new drilling, expenditures on two 12,000-ton tankers, and additions to manufacturing and distributing plants. One new 7,500-ton tanker has been contracted for.

Current assets at September 30, 1920, approximated $35,250,000, an increase over December 31, 1919, of about $4,150,000. Current assets are over 6 to 1 of current liabilities, which stood at $5,500,000, or $1,000,000 less than at the end of 1919. Capital stock outstanding at September 30 amounted to $50,000,000; surplus and operating reserves, $33,000,000.

States Oil Corp. Offers 80,000 Shares

By Special Correspondent

PITTSBURGH, Oct. 16.—At a meeting of the State Oil Corporation at Eastland, Texas, Friday, a resolution was unanimously adopted that from the 120,000 shares of the treasury stock of the corporation there shall be offered for subscription 80,000 shares at $30 per share. Stockholders of record at the close of business October 16 shall have the right to subscribe in the proportion of one share for each share owned. Warrant for subscription shall be under date of October 20.

The right to subscribe will expire November 5. Any stock not taken up will be reoffered.

States Oil is the leading venture of the McCaskey-Wentz-Weaver interests in Texas. The leading interests in the company are former Pittsburghers. States Oil was originally issued at $5 a share and recently was quoted around $100. Their second venture, West Texas Oil, also launched at $5, had a sharp upturn to around $60, but now is about $15 a share. The third of their companies, Duquesne Oil, was offered insiders at $3 and it went to $14, only to react to $3 recently. Texas has been neglected for months, while Duquesne Oil maintains two or three outfits in operation, but shows little oil.

States Oil was incorporated in Delaware in 1917. Authorized capital, $1,000,000—issued, $400,000, par value $5 per share. President, J. G. McCaskey; vice president, L. H. Wentz, secretary and treasurer, Joseph M. Weaver. The States owns about 16,000 acres in Eastland and Stephens counties, Texas, has about 5,000 barrels per day production from about 20 wells, has 35 new wells drilling. West Texas was incorporated in Delaware in 1918. It has authorized capital of $1,000,000—issued, $4,000, par value $5 per share. Company has 50,000 acres in Midland county, Texas, about 60 acres in Eastland

and Stephens counties, and a royalty interest in 880 acres in Eastland county, Texas. Company also owns one-quarter of the stock of the West Virginia-Texas Oil Company, capitalized at $1,000,000, owning 50,000 acres of leases in Midland county, Texas.

$4,500,000 In 1920 For Producers & Refiners

Eight months' net earnings of Producers & Refiners Company, brought up to August 1, 1920, total in round numbers $2,500,000, by months as follows: January, $250,000; February, $300,000; March, $350,000; April, $403,000; May, $380,000; June, $407,000; July, $412,000. If the indicated August earnings exceed those of July and the present rate is kept up to the end of the year, total net earnings should be around $4,500,000.

Income and expense data for July show gross income of $663,409 and net income of $412,468, both being the largest in the history of the company. This was a gain of $373,478 in gross income and $333,675 in net income as compared with the record of July, 1919, when the gross income was $289,931, and the net income, $78,793, or an increase of 423 per cent in July this year over July of last year.

It is interesting to note that while the increased net income was $333,675, it was made possible by an increase in the expenses of only $39,803, the total expense for July, 1920, being $250,941, while the total expenses for July, 1919, were $211,138. The per cent of net to gross income in July, 1920, was 62 while in 1919 it was 27 per cent.

Atlantic Rig. Profits $3,782,554 For Half Year

Substantial progress was made by the Atlantic Refining Company and subsidiary companies during the first six months of 1920, according to a consolidated statement of earnings just given out. In outline it shows:

Gross income from operations	$60,160,170
Less raw materials, operating and other expenses	55,249,141
Net income from operations	$ 4,911,029
Add other income	385,243
Total income	$ 5,296,272
Less insurance and other reserves	431,585
Profit before deducting Federal taxes	$ 4,864,687
Deduct reserve for Federal taxes, 6 mos. (est.)	1,082,132
Net profit	$ 3,782,554
Dividends paid	1,177,589
Balance to surplus	$ 2,604,965
Surplus, December 31, 1919	56,324,454
Surplus, June 30, 1920	$58,929,419

At the above rate, the net profits, after Federal taxes, for the entire year of 1920 are indicated as in excess of $7,500,000, comparing with $8,871,046 in 1919; $7,410,000 in 1918; $9,006,000 in 1917; $9,628,000 in 1916; and $5,592,000 in 1915.

General American Tank Car.—Had total assets June 30, 1920, $37,208,016, compared with $27,737,636 December 31, 1919. Fixed assets were $20,564,434; surplus was $12,067,512.

Recent Charters, Earnings, Issues, Statements, Briefly Told

Texas Company.—Directors have voted to recommend a 10 per cent stock dividend, payable March 31, 1921, to stockholders of record December 10, 1920. Stock is to be increased from $130,000,000 to $143,000,000.

New Oil Companies.—Authorized capital of 76 oil companies chartered in September totaled $136,100,000. Indicated investment in new oil companies for the nine months of 1920 was $1,914,976,700.

Marland Oil.—Has been chartered in Delaware with an authorized capital stock of $200,000,000, to acquire oil lands, drill for and market oil. Incorporators: E. W. Marland, W. G. Lackey, and W. H. McFadden, all of Ponca City, Okla.

Pierce Oil.—Business is now running about $5,000,000 gross monthly, and if net profits are only $500,000 a month in the last four months of the year, profits for 1920 will total $4,982,392 after taxes, depreciation and depletion.

Sinclair Consolidated.—The remaining five-year 7½ per cent convertible notes (the last $9,000,000 of $50,000,000 offered has been sold.

Shaffer Oil & Refining.—Gross earnings for year ended July, 1920, were $11,187,651; net income, before deductions for federal taxes, $4,084,019.

Transcontinental Oil.—Has acquired the holdings of the Latin America Petroleum Corporation, of Colombia, comprising 600,000 acres of oil and gas lands in the provinces of Carmen and San Jacinto.

Mexican Petroleum.—Net profits for the quarter ended September 30 are understood to have been in excess of $3,000,000 after taxes and depreciation, or equal approximately to $6 a share on the common, after preferred dividends.

White Eagle Oil & Refg.—August earnings were approximately $260,000.

Phillips Petroleum.—Net earnings in July, before taxes, depreciation and depletion, were in excess of $600,000, it is reported.

White Oil Corporation.—Net earnings for July, 1920, were $460,137; 7 months, $1,695,187; excess of market value over cost of oil in storage, July, $78,171; 7 months, $1,401,856; reserve for federal taxes, etc., July, $150,000; 7 months, $1,050,000; interest, July, $11,174; 7 months, $68,151; miscellaneous, July, $29,304; 7 months, $83,749; surplus, July, $347,830; 7 months, $1,895,143. Net production (barrels): August, 192,348; July, 185,253; June, 144,746; May, 166,505; number of producing wells, 214; drilling, 31; rigs up, 7.

Merla Mexican Oil Corporation.—Organized recently under Delaware laws, with an authorized capitalization of $10,000,000, this company will start drilling six wells immediately in the Panuco and districts of Mexico, according to President Jose Merla.

Boston Mexican Petroleum.—Having overcome its transportation difficulties, the company is now delivering 25,000 barrels daily.

Atlantic Gulf.—The company and its associates are committed to an expenditure of $15,000,000 to $18,000,000 for pipe lines, storage tanks, refinery, etc., in this country, England and France. When final delivery of ordered tankers is made, it will have a marine investment of $35,000,000.

Curacao Petroleum Company.—This is the most important industry in the Dutch West Indies colony of Curacao employing more than 1,000 hands. The establishment represents an investment of nearly $2,000,000. Recent difficulties in obtaining crude oil from its wells in Venezuela have been overcome and with crude supplies from Mexico as well, it is now working day and night. The company has ordered machinery from the United States for manufacturing its own gasoline cans.

Cities Service Company.—August gross, $2,014,224; available for reserves, dividends on common stock and surplus, $1,409,895, an increase of $681,922 over August, 1919. For the twelve months ended August 31, 1920, $42.16 a share was earned on the average amount of common stock outstanding.

Middle States Oil.—Stockholders voted September 20 to increase the capital stock from $8,000,000 to $16,000,000, par $10.

New Booklet on Standard Oils

We now have available for distribution our new 18th Edition Booklet on Standard Oil Issues, containing all 1919 financial statements issued to date and other detailed information regarding each company of this group. The booklet also contains a comprehensive review of the general oil situation.

Copies furnished free upon request for Booklet No. 18-P.N.

CARL H. PFORZHEIMER & CO.
Dealers in Standard Oil Securities
25 Broad Street New York

How Oil Shares Moved Last Week

NEW YORK STOCK EXCHANGE

	Par Value	High 1920	Low 1920	Week's Sales	Price Oct. 9	Week's High	Week's Low	Price Oct. 15	Week's Gain or Loss
Caddo Oil & Refg	$100	28¾	12	5,300	15⅞	19	15⅞	18½	+2⅝
California Petroleum	100	46	22¾	500	.....	27⅜	26	27⅜	.....
Cosden & Co	No par	43⅜	30	1,900	36½	37	36	37	+½
Houston Oil	100	110⅜	75	2,800	104	107⅝	103⅜	107	+3
Invincible Oil & Refg	50	47¾	30¼	21,500	30¾	33¼	29	32¾	+2
Island Oil & Tr	10	7¾	5¼	12,700	**6⅛	6⅞	5⅞	6	—⅛
Mex. Petroleum	100	222	148	63,600	187	193	185½	191⅝	+4⅝
Middle States Oil	10	71¾	10¾	69,200	15	15¼	13⅞	14½	—½
Okla. Prod. & Refg	5	5¾	3⅜	3,000	4	4⅝	3⅞	3⅞	—⅛
Pan.-Amer. Petroleum	50	116⅛	71¾	41,400	(a) 89¼	91	87⅛	90½	+1¼
Phillips Petroleum	No par	44½	32½	200	.....	36½	35½	35½	.....
Pierce Oil Corp	25	23¼	11	800	14	14⅝	13¼	14¼	+¼
Pure Oil Co	25	42⅞	36	5,100	39	39¾	38⅞	39	.....
Royal Dutch, N. Y.	$13.40	123⅛	69⅛	46,200	82	82¼	75¼	80	—2
Shell Transport	£2	90¼	45⅝	5,200	*50⅝	50⅝	48¼	49½	—1⅛
Sinclair Consol	No par	48¾	23⅛	22,800	31½	32⅜	31	32	+½
Standard Oil, N. J.	100	850	600	Odd lots	621	640	619	640	+19
do. pfd	100	113⅜	100⅛	3,300	105	105⅜	105	105¼	+¼
Texas Company (new)	25	**57¾	40¼	42,500	50	50⅞	49¼	50½	+½
Texas Pac. C. & O	10	53⅜	33	10,700	33½	34	31	33½	.....
Transcontinental Oil	No par	38¾	9⅛	3,900	12	12	11½	12	.....
Union Oil	No par	38	25¾	3,600	27½	27½	26½	26⅞	+½

**Reduced to basis of $25 par. *Ex-rights. (a) Ex-dividend 5% Class B Stock.

NEW YORK CURB MARKET

Cities Serv. Bkrs	No par	44⅜	29½	1,500	34⅜	34⅝	33⅜	.....	.....
Elk Basin	5	11⅝	6½	4,600	.....	8⅞	8½	8⅞	.....
Federal Oil	5	4¼	2	23,500	2⅜	2⅝	2¼	2⅝	+¼
Glenrock Oil	10	4¾	1⅜	6,900	2	2	1⅞	2	.....
Guffey-Gillespie	No par	39¾	25¾	3,600	.....	32¾	31½	32¾	.....
Intern. Petroleum	5	77	27	3,500	(b) 16	16¾	15⅝	16¼	+¾
Merritt Oil	10	22⅝	10¾	700	.....	14¾	14	14¾	.....
Midwest Refg	10	190	128	400	150	151	149	.....	.....
N. Am. O. & R	5	5⅜	2	600	3¼	3⅜	3	3⅜	+⅜
Pennok Oil	10	9½	5	No sales reported.					
Prodrs. & Refrs	10	10½	5⅝	5,800	.....	6⅝	6	6⅜	.....
Sapulpa Refg	5	7¾	4⅝	600	.....	5¾	5¾	.....	.....
Salt Creek Prod	25	56	29½	No sales reported.					
Simms Petroleum	No par	73½	9⅝	21,000	10	11	9⅞	10⅝	+⅞
White Oil	No par	50	16	22,200	22½	24¼	21⅞	24	+1½

(b) New stock.

PITTSBURGH STOCK EXCHANGE

Arkansas Nat. Gas	10	45	9½	1,480	10⅝	10⅞	10	10¼	—3
Barnsdall Corp., A	25	50	36	70	41	40½	40	40	—1
Barnsdall Corp., B	25	46	35	50	38	38½	38½	38½	+½
Guffey-Gillespie Oil	No par	40	25½	3,110	32	32⅜	31½	32⅜	+⅞
Kay County Gas	1	2½	1½	965	1⅞	1⅞	1¾	1⅞	.....
Lone Star Gas	25	45½	25	185	30	30½	30	30	.....
Man. Light & Heat	50	61¾	48½	1,065	53½	56	53	56	+2⅜
Marland Refining	5	6½	3⅞	1,212	4	4	‡3⅞	4	.....
Ohio Fuel Oil	1	34⅞	21	360	26	25	25	25	—1
Ohio Fuel Supply	25	55	44	244	47½	47¾	47½	47½	.....
Oklahoma Nat. Gas	25	43	29⅞	110	32	31¾	31¾	31¾	—¾
Oklahoma Prod. & Refg	5	6½	3⅞	No sales reported.					
Pittsburgh Oil & Gas	5	16	10	40	12⅝	12½	12½	12½	—⅛
Paragon Refg	25	28⅛	26	60	27⅜	28⅜	*27¾	27¾	—¾
Union Nat. Gas	100	130	117	20	120	120	120	120	.....
Middle States Oil	10	18½	14⅞	100	16½	14⅞	14⅞	14⅞	—1⅝
Transcontinental Oil	No par	37⅜	9⅞	.....	11½	No sales reported.			

*Ex-dividend. ‡New low record.

PITTSBURGH CURB MARKET

Allied Oil	1	1.25	.20	200	.20	.22	.22	.22	+.02
Atlantic Petroleum	5	4	3¼	No sales reported.					
Boston-Wyoming	1	1.25	.62	No sales reported.					
Columbia Syndicate	10	11	6	No sales reported.					
Duquesne Oil	5	7½	2¾	775	2⅞	3	2⅞	3	+⅛
Homer Union Pet	1	1.25	.13	8,600	.17	.18	.13	.13	—.05
Gulf Oil Corp	100	475	400	50	.....	420	420	420	.....
Marshall Oil	10	13½	9	125	.....	9	9	9	.....
Mexico-Wyoming	1	1.45	.45	2,300	.52	.51	.45	.49	—.03
Mountain & Gulf	1	1.40	.90	No sales reported.					
Omar Oil & Gas	10	7½	2⅞	100	3	2⅞	2⅞	2⅞	—⅛
States Oil	5	160	70	No sales reported.					
Salt Creek Consol	10	21	12	20	13	12½	12½	12½	—½
Tropical Oil	25	23	16½	No sales reported.					
Twin City Oil	1	.30	.08	15,800	.10	.10	.09	.09	—.01

Standard Oil Stocks

Standard Oil securities are dealt with to only a small extent on the New York curb market, the great majority of sales being made over the counters of investment bankers. For this reason no record can be obtained of the total volume of sales from day to day to indicate the activity of any particular stock. Below are bid and asked quotations prevailing on the curb market at the close of business on the date given, the same quotations prevailing in the majority of unrecorded transactions:

STANDARD OIL GROUP

	Oct. 15 Bid	Oct. 15 Asked	1920 High	1920 Low
Anglo-American	20½	21½	31	19
Atlantic Refg	1,050	1,150	1,650	1,050
Buckeye Pipe	88	91	102	84
Continental Oil	115	120	(b) 575	530
Galena-Signal	42	45	97	40
Illinois Pipe	158	163	178	100
Ohio Oil	298	303	395	270
Penn.-Mex	49	51	74	38
Prairie Oil & Gas	550	560	690	520
Prairie Pipe	220	225	280	188
South Penn	268	273	345	260
S. O. California	318	322	338	297
S. O. Indiana	700	705	760	640
S. O. Kansas	510	530	750	500
S. O. Kentucky	450	475	485	325
S. O. New York	375	380	460	280
S. O. Ohio	400	420	560	400
Union Tank Line	112	117	115½	103
Vacuum Oil	348	353	435	330

(b) Before stock dividend.

UNLISTED SECURITIES

By Carl H. Pforzheimer & Co.

	Par Value	Oct. 15 Bid	Oct. 15 Asked	1920 High	1920 Low
Gulf Oil Corp	$100	420	430	550	394
Humble Oil & Refg.	100	235	245	323	225
Magnolia Petroleum.	100	330	340	450	315

MISCELLANEOUS STOCKS

The following are bid and asked prices ruling at the close of business on the date given, on the stock markets indicated by reference marks, with high and low levels reached so far this year:

	Par Value	Oct. 15 Bid	Oct. 15 Asked	1920 High	1920 Low
Cities Serv. (a)	$100	294	297	....	....
do. pfd. (a)	100	65¼	65½	74	64
Nat. Refg. (a)	100	....	225	*410	355
do. pfd. (a)	100	....	115	126	9
Paragon Refg. (a)	25	27½	28	27½	2
do. pfd. (a)	100	....	96¾	100½	100
Indiahoma Refg. (c).	5	8.00	8.25	....	....
Marland Refg. (c)	5	3.87½	4.00	....	....

*Before stock dividend.
(a) Cleveland.
(c) St. Louis.